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Physical Characteristics

of some representative Louisiana soils

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This report has been prepared by the Agricultural Research Service, and covers a part of the cooperative survey and investigations of the Lower Mississippi River and tributaries made by the Agricultural Research Service, Forest Service, and Soil Conservation Service, U. S. Department of Agriculture, under Section 6, Public Law 566, 83d Congress, in cooperation with the Mississippi River Commission.

PHYSICAL CHARACTERISTICS OF SOME REPRESENTATIVE LOUISIANA SOILS [1]

Zane F. Lund and Lester L. Loftin [2]

INTRODUCTION

Increased attention is being focused on soil moisture control as a means of more efficiently utilizing the natural soil resources and the better plant varieties and fertility practices of today. In Louisiana soil moisture control may consist of either water removal by drainage or the addition of water as supplemental irrigation. The sugarcane areas of the State have been under drainage programs for years; in the cotton areas of the State, drainage or supplemental irrigation or a combination may be profitable.

During the growing seasons of 1951 through 1954 and in 1956 there was insufficient rainfall. Many farmers found it quite profitable to irrigate in those years. Some areas of the State, such as the Macon Ridge

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[1] Joint contribution of the Agricultural Research Service and Soil Conservation Service, United States Department of Agriculture, and the Louisiana Agricultural Experiment Station cooperating.

[2] Zane F. Lund, Soil Scientist, Eastern Soil and Water Management Research Branch, Soil and Water Conservation Research Division, Agricultural Research Service, USDA, located at Louisiana Agricultural Experiment Station, Baton Rouge, La.; Lester L. Loftin, Soil Specialist, Soil Conservation Service, USDA, located at Alexandria, La.

Acknowledgments are made to D. L. Fontenot, State Soil Scientist, Soil Conservation Service, for aid in selecting series to be sampled; Dr. W. H. Patrick, Agronomy Dept., La. State Univ., for organic matter determinations; and S. L. Earle, Agricultural Research Service, Soil and Water Conservation Research Division, for aid in making laboratory determinations.

area, may utilize irrigation more frequently than other areas, and in most years supplemental irrigation may be profitable. Some understanding of the soil physical properties and soil-water relations are necessary before efficient irrigation or drainage systems can be devised.

This report should supply information useful in planning irrigation or drainage systems.

SOILS STUDIED

The soils of Louisiana may be divided into four general soil areas, excluding the marsh area. (see fig. 1.) The first, and probably the most prominent agriculturally, are the bottom land and low terrace soils of the Mississippi and Red Rivers. Recent alluvial soils derived from Mississippi River sediments included in this report are Commerce, Mhoon, Sharkey, Crevasse, and Tunica. Iberia and Cypremort are older alluviums. Red River soils are Miller and Yahola. Gallion* is of similar origin but located along Bayou Bartholomew. The Charlieville,* Mer Rouge,* and Hebert* series are old Arkansas River materials mixed with Mississippi River and local alluviums. The coarser textured soils are used extensively for cotton and corn, whereas the finer textured soils are planted to soybeans and pasture. In the southern half of the State, cane is grown on many of the Mississippi River bottom lands and terrace soils.

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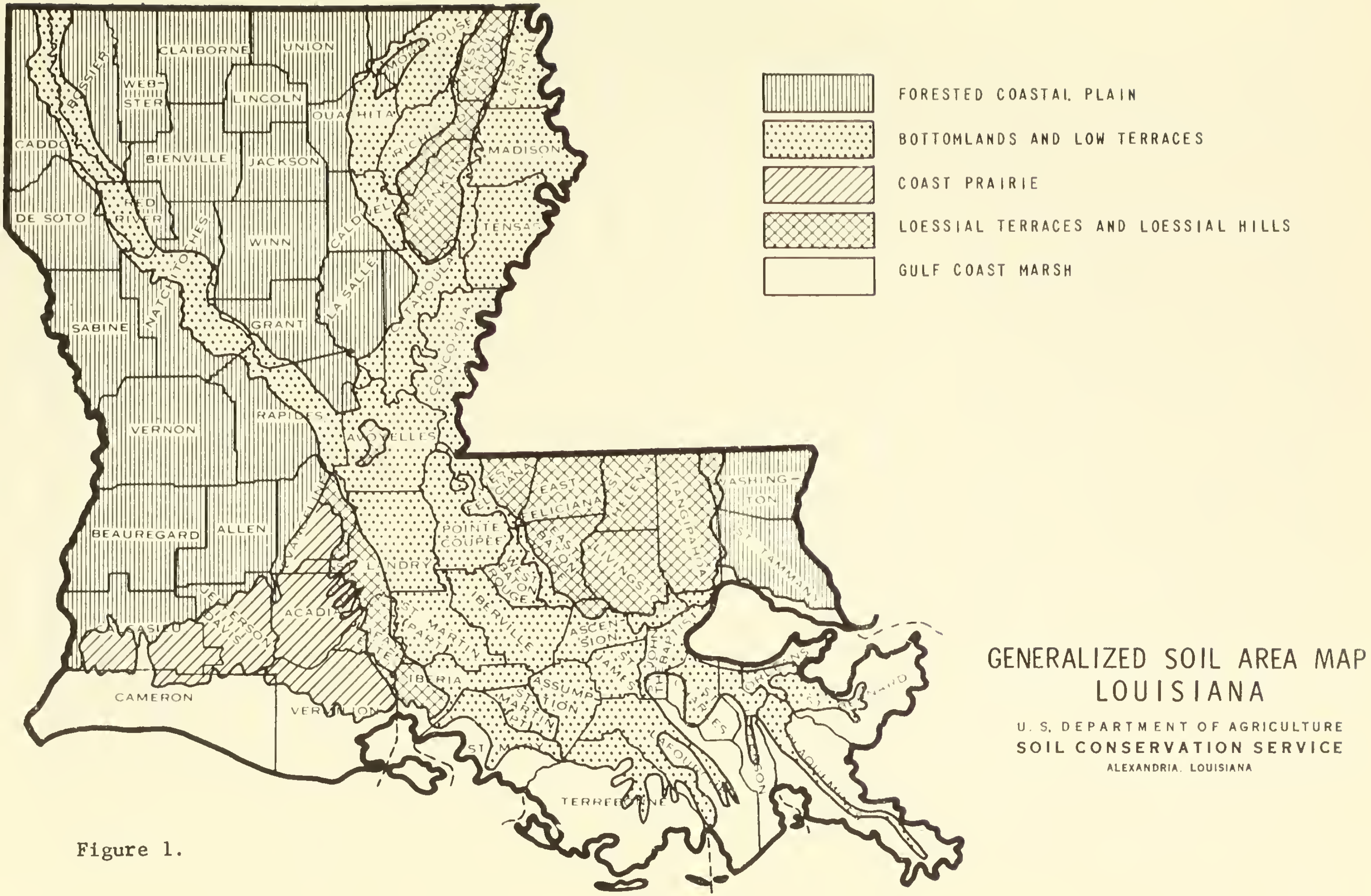
* Tentative series.



GENERALIZED SOIL AREA MAP
LOUISIANA

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
ALEXANDRIA, LOUISIANA

Figure 1.

USDA SCS FORT WORTH TEX 1958

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The coastal prairie soils are important agriculturally from the standpoint of rice and pastures. Crowley, Beaumont, and Oberlin* are found in this group of soils. Drainage is a problem in this area.

Loessial terrace and Loessial hill soils included in this report are Lintonia, Richland, Olivier, Calhoun, Springfield, Providence, Loring, Lexington, and Foley. These soils are characterized by being high in silt; they are used extensively for cotton, corn, sweet potatoes, and pasture, and to some extent for cane.

Ruston, Kisatchie,* Binnsville, Shubuta, Boswell, and Lakeland are found in the Forested Coastal Plains area. Although they were farmed extensively in the past, the area has been progressively reforested to pine trees.

Many other series may be found in Louisiana, and some of these will be quite important agriculturally. Because soil texture is basic to water relations, in general, data from these series studied may be used to ascertain water relations within similar series not analyzed. Differences due to bulk density, structure, fragipans, clay lenses, or sand layers must be taken into account.

The organic content of most Louisiana soils is generally low. Therefore, it would have little influence on available water-holding capacity. Organic matter, per se, holds much of its water at suction values too high to be available to plants, but it binds fine clay particles into microaggregates which will hold water in suction ranges available to plants. It will also expedite water movement in soils through its influence on structure.

SAMPLING PROCEDURES

The series to be sampled and the sampling sites were chosen by the Soil Conservation Service. The series selected for sampling were considered to be among the most important in the State. An effort was made to obtain sites having physical characteristics median to the series and to obtain a wide range of physical characteristics between series. The locations were sampled by textural layer down at least to 36 inches.

Bulk samples were obtained for the moisture desorption data, particle size analysis, and particle density analysis, by using a bucket type auger. Quadruplicate cores were obtained by using a Uhland type sampler and 3 by 3-inch aluminum rings. The cores were used for bulk density determinations, permeability, pore size distribution, and total porosity. Because difficulty was encountered in obtaining valid cores in some of the finer textured soils, data of these cores were not used in this report.

LABORATORY PROCEDURES

Air-dried and sieved soil was used for the determination of the moisture desorption data. Pressure cells were used for the 15, 4, 2, and 1 atmosphere points, and a pressure cooker for the 2/3, 1/2, 1/3, and 1/10 atmosphere points. Percent clay was determined by hydrometer; percent sand, by sieving; and percent silt, by difference. Particle density was measured by placing a known weight of oven-dry soil in a 250-ml. volumetric flask, saturating the sample under suction and bringing it up to volume with distilled water.

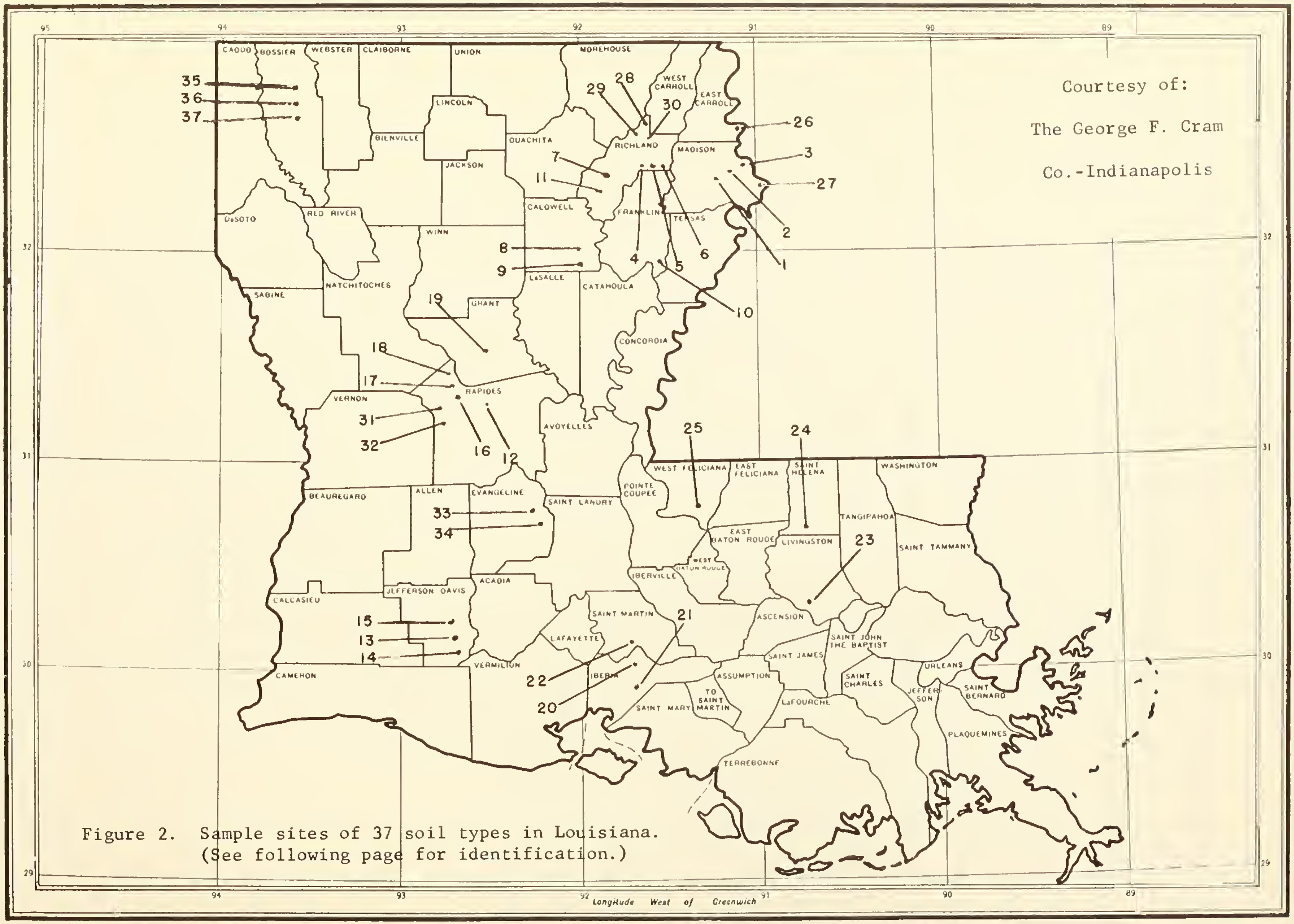
The cores were brought into the laboratory, trimmed, allowed to saturate overnight, and placed on a permeability rack designed to give a hydraulic gradient of 2. Water was allowed to percolate through the sample for 24 hours, then the percolate was caught over a 1-hour increment of time to measure the permeability rate. The cores were then weighed, placed on a tension table, and subjected to tensions of 10, 20, 30, 40, 50, and 60 cm., the cores being held at each tension for 24 hours before weighing. Then the cores were placed in a forced-draft oven for 48 hours at 105° C. Total porosity was calculated by means of particle density and net oven-dry weight.

Organic matter determinations by organic carbon method were made by Dr. W. H. Patrick, Agronomy Department, L.S.U., Baton Rouge, Louisiana.

USE OF SOIL MOISTURE DATA

It is beyond the scope of this report to detail the possible use of soil moisture data, but this report could serve as a preliminary guide in planning moisture control work. Modifications will be necessary to fit individual cases. In fine-textured soils, it would be desirable to select a suction value slightly higher than 1/3 atmosphere for field capacity. In coarse-textured soils a much lower suction value may more closely approximate field capacity. Usually errors will be small by using the 15-atmosphere suction value for wilting point. The difference between the point selected for field capacity and the 15-atmosphere point will approximate the range of moisture held by the soil that is available to plants.

The range (on a percent weight basis) when multiplied by bulk density and the depth of textural layer in inches will give the amount of water in inches held by that textural layer that is available to plants. When this figure is divided by daily evapotranspiration rate, irrigation frequency may be determined. By adding the water held in the different layers in the probable rooting depth, the moisture the soil will hold when at field capacity may be computed. This, in addition to infiltration rate, determines duration and rate of irrigation. Rooting depth will be determined by plant age, health, species, and soil texture. Dense soil layers and bulk density will also affect rooting depth. When combined with a statistical compilation of weather data (probability of drought and excess rainfall periods such as developed by C. H. M. Van Bavel), this information should help determine the feasibility of an irrigation program. Soils information must be developed along this line before an efficient irrigation system can be designed. Such information should also be used as the basis in designing a drainage system.



Courtesy of:

The George F. Cram

Co.-Indianapolis

Figure 2. Sample sites of 37 soil types in Louisiana. (See following page for identification.)

SOILS ANALYZED

I. Bottom Lands and Low Terrace Soils

Series	Sample No.
Charlieville*	9, 11
Commerce	1
Crevasse	26
Cypremort	21
Gallion*	8
Harris	22
Hebert*	30
Iberia	20
Mer Rouge*	7
Mhoon	2, 20
Miller	17, 18
Sharkey	3
Tunica	27
Yahola	12, 16

II. Coastal Prairie Soils

Series	Sample No.
Beaumont	14
Crowley	13, 15
Oberlin*	34

III. Loessial Terrace and Loessial Hill Soils

Series	Sample No.
Calhoun	6, 28
Foley	29
Lexington	33
Lintonia	10
Loring	25
Olivier	5
Providence	24
Richland	4
Springfield	23

IV. Forested Coastal Plains Soils

Series	Sample No.
Binnsville	32
Boswell	36
Kisatchie*	31
Lakeland	37
Ruston	19
Shubuta	35

* Tentative series.

SOIL PROFILE DESCRIPTION

Sample 1

Soil Type: Commerce Loam
Classification: Alluvial
Topography: Level (0-1% slope)
Drainage: Moderately well drained
Parent Material: Mississippi alluvium
Area: Madison Parish, Louisiana
Location: NW, SE, Sec. 35, R13E, T17N, 2.1 mi. east of U.S. Hwy. 65, 50 ft. south of road

Sample Designation	Horizon	Depth	Description
1-A	A_p	0"-9"	Dark grayish brown (10YR 4/2 moist) loam; weak fine granular; very friable; plow pan (compacted) 5" to 9".
1-B	$C_{(1)}$	9"-15"	Dark brown (10YR 4/3 moist) loam with few fine faint grayish brown (10YR 5/2) mottles; massive; very friable.
1-C	$C_{(2)}$	15"-20"	Dark grayish brown (10YR 4/2 moist) clay loam with common fine faint dark yellowish brown (10YR 4/4) mottles; weak medium subangular blocky; firm.
1-D	$C_{(3)}$	20"-29"	Dark grayish brown (10YR 4/2 moist) loam with common fine faint dark yellowish brown (10YR 4/4) mottles; massive, very friable.
1-E	$C_{(4)}$	29"-36"+	Dark brown (10YR 4/3 moist) loam with few small faint dark yellowish brown (10YR 4/4) mottles; massive; friable.

Remarks: Textures from mechanical analyses.

Described: June 1957.

SOIL PHYSICAL CHARACTERISTIC DATA

Commerce Series

Physical Analyses

Sample Number	Depth	Particle Size Analysis % Clay	% Silt	% Sand	Textural Class	Bulk Density Gm/Cm^3	Particle Density Gm/Cm^3	Permeability In/Hour	Total Pores
1-A	0-9"	21.4	36.0	42.6	L *	1.34	2.57	0.06	47.6
1-B	9-15"	25.5	29.1	45.4	L	1.39	2.56	.53	45.7
1-C	15-20"	33.5	43.7	22.8	Cl L	1.37	2.54	.12	46.2
1-D	20-29"	21.8	31.3	46.9	L	1.33	2.60	1.00	48.7
1-E	29-36"	22.6	42.6	34.8	L	1.34	2.53	.49	46.8

Moisture Desorption Data (% Moisture by Weight)

	15 atm. Percent	4 atm. Percent	2 atm. Percent	1 atm. Percent	2/3 atm. Percent	1/2 atm. Percent	1/3 atm. Percent	1/10 atm. Percent
1-A	6.9	8.1	8.3	9.0	10.3	11.5	14.2	32.8
1-B	7.7	9.7	10.2	10.9	12.7	13.6	16.8	31.8
1-C	11.2	15.1	16.0	16.7	19.7	20.7	25.3	38.2
1-D	6.5	7.2	7.5	8.0	9.3	10.1	12.4	35.1
1-E	8.3	11.1	11.4	12.3	15.6	16.9	21.8	36.9

Pore Size Distribution (Vol. Percent) / Organic Matter

	10 Cm T[1/] Percent	20 Cm T Percent	30 Cm T Percent	40 Cm T Percent	50 Cm T Percent	60 Cm T Percent	Organic Matter Percent
1-A	3.7	5.3	6.3	6.8	7.8	7.9	1.19
1-B	3.9	5.8	6.6	7.0	8.0	8.1	0.44
1-C	2.6	4.6	5.5	6.3	7.3	7.4	0.55
1-D	4.3	6.0	7.0	7.7	9.2	9.6	0.35
1-E	3.2	5.1	6.0	6.8	8.3	8.5	0.37

* In these tables the following symbols are used:
Cl - Clay, L - Loam, S - Sand, Si - Silt.

[1/] Cm Tension.

SOIL PROFILE DESCRIPTION

Sample 2

Soil Type: Mhoon Clay Loam
Classification: Alluvial
Topography: Level (0-1% slope)
Drainage: Imperfectly drained
Parent Material: Mississippi alluvium
Area: Madison Parish, Louisiana
Location: NE, SW, Sec. 35, R13E, T17N, 1.7 mi. east of U.S. Hwy. 65

Sample Designation	Horizon	Depth	Description
2-A	A_p	0"-12"	Dark grayish brown (10YR 4/2 moist) clay loam; weak medium subangular blocky; friable to firm.
2-B	$C_{(1)}$	12"-28"	Very dark grayish brown (10YR 3/2 moist) clay; moderate fine angular blocky; firm.
2-C	$C_{(2)}$	28"-36"+	Variegated dark grayish brown (10YR 4/2 moist) and dark gray (10YR 4/1 moist) silt clay; weak medium subangular blocky; firm.

Remarks: Textures from mechanical analyses.

Described: June 1957.

SOIL PHYSICAL CHARACTERISTIC DATA

Mhoon Series

Physical Analyses

Sample Number	Depth	Particle Size Analysis % Clay	% Silt	% Sand	Textural Class	Bulk Density Gm/Cm^3	Particle Density Gm/Cm^3	Permeability In/Hour	Total Pores
2-A	0-12"	28.4	38.1	33.5	Cl L	1.31	2.57	0.21	48.9
2-B	12-28"	62.3	32.4	5.3	Cl	1.36	2.54	.01	46.5
2-C	28-36"	45.4	44.6	10.0	Si Cl	1.31	2.54	.01	48.4

Moisture Desorption Data (% Moisture by Weight)

	15 atm. Percent	4 atm. Percent	2 atm. Percent	1 atm. Percent	2/3 atm. Percent	1/2 atm. Percent	1/3 atm. Percent	1/10 atm. Percent
2-A	8.9	12.3	12.8	13.4	15.9	16.8	20.4	34.4
2-B	23.7	28.1	30.0	31.2	34.7	36.4	39.2	49.1
2-C	19.0	21.6	23.2	25.1	30.0	31.6	34.3	42.6

	Pore Size Distribution (Vol. Percent) 10 Cm T Percent	20 Cm T Percent	30 Cm T Percent	40 Cm T Percent	50 Cm T Percent	60 Cm T Percent	Organic Matter Percent
2-A	3.7	4.9	5.5	6.0	6.5	7.1	0.84
2-B	1.4	2.2	2.8	3.2	3.4	3.8	1.63
2-C	1.5	2.2	2.5	2.8	3.0	3.3	-

SOIL PROFILE DESCRIPTION

Sample 3

Soil Type: Sharkey Clay
Classification: Grumusol intergrade to Low-Humic Gley
Topography: Level (0-1% slope)
Drainage: Poorly drained
Parent Material: Mississippi alluvium
Area: Madison Parish, Louisiana
Location: SE, NW, Sec. 34, R13E, T17N, 100 ft. west of road intersection

Sample Designation	Horizon	Depth	Description
3-A	A_p	0"-8"	Very dark grayish brown (10YR 3/2 moist) clay; weak medium angular blocky; firm.
3-B	C	8"-42"+	Dark gray (10YR 4/1 moist) clay with common fine faint dark brown (10YR 4/3) mottles; moderate fine angular blocky; very firm.

Remarks: Textures from mechanical analyses.

Described: June 1957.

SOIL PHYSICAL CHARACTERISTIC DATA

Sharkey Series

Physical Analyses

Sample Number	Depth	Particle Size Analysis % Clay	% Silt	% Sand	Textural Class	Bulk Density Gm/Cm3	Particle Density Gm/Cm3	Permeability In/Hour	Total Pores
3-A	0-8"	78.9	20.4	0.7	Cl	1.22	2.53	0.00	51.6
3-B	8-40"	78.6	21.0	.4	Cl	1.18	2.49	.00	52.7

Moisture Desorption Data (% Moisture by Weight)

	15 atm. Percent	4 atm. Percent	2 atm. Percent	1 atm. Percent	2/3 atm. Percent	1/2 atm. Percent	1/3 atm. Percent	1/10 atm. Percent
3-A	30.2	33.7	36.3	39.5	40.7	45.2	46.3	58.5
3-B	30.9	35.9	40.0	42.9	44.6	48.9	50.7	62.5

Pore Size Distribution (Vol. Percent) / Organic Matter

	10 Cm T Percent	20 Cm T Percent	30 Cm T Percent	40 Cm T Percent	50 Cm T Percent	60 Cm T Percent	Organic Matter Percent
3-A	0.6	1.0	1.3	1.4	1.6	1.7	3.02
3-B	.5	1.0	1.7	2.4	3.0	3.6	2.11

SOIL PROFILE DESCRIPTION

Sample 4

Soil Type: Richland Silt Loam
Classification: Red-Yellow Podzolic
Topography: Nearly level (1-3% slope)
Drainage: Moderately well drained
Parent Material: Old alluvium with loess influence
Area: Richland Parish, Louisiana
Location: SE, NE, Sec. 15, 9RE, T17N, north of U.S. Hwy. 80, opposite gasoline plant road

Sample Designation	Horizon	Depth	Description
4-A	A_p	0"-4"	Dark grayish brown (10YR 4/2 moist) silt loam; moderate fine granular structure; friable.
4-B	A_{2an}	4"-8"	Yellowish brown (10YR 5/4 moist) silt loam; weak, fine to medium granular structure; friable to firm; slightly compacted (plow pan).
4-C	B_{21}	8"-23"	Yellowish brown (10YR 5/6 moist) silty clay loam; moderate fine subangular blocky; friable.
4-D	B_{22}	23"-30"	Light yellowish brown (10YR 6/4 moist) silty clay loam with common medium distinct light gray (2.5Y 7/2) mottles; moderate fine subangular blocky; friable; few dark concretions.
4-E	B_{3mg}	30"-36"+	Light gray (10YR 7/2 moist) silty clay loam with many fine distinct dark yellowish brown (10YR 4/4) mottles; moderate fine subangular blocky; friable; few dark concretions.

Remarks: Textures from mechanical analyses.

Described: June 1957.

SOIL PHYSICAL CHARACTERISTIC DATA

Richland Series

Physical Analyses

Sample Number	Depth	Particle Size Analysis			Textural Class	Bulk Density Gm/Cm^3	Particle Density Gm/Cm^3	Permeability In/Hour	Total Pores
		% Clay	% Silt	% Sand					
4-A	0-4"	22.4	70.7	6.9	Si L	1.36	2.53	0.26	46.1
4-B	4-8"	24.5	68.4	7.1	Si L	1.41	2.59	.22	45.1
4-C	8-23"	37.8	60.0	2.2	Si Cl L	1.36	2.58	.10	47.3
4-D	23-30"	33.2	64.6	2.2	Si Cl L	1.37	2.55	.13	45.9
4-E	30-36"	32.4	66.1	1.5	Si Cl L	1.44	2.53	.04	43.0

Moisture Desorption Data (% Moisture by Weight)

	15 atm. Percent	4 atm. Percent	2 atm. Percent	1 atm. Percent	2/3 atm. Percent	1/2 atm. Percent	1/3 atm. Percent	1/10 atm. Percent
4-A	6.5	8.6	9.9	11.7	15.5	18.9	24.2	37.8
4-B	6.3	8.3	10.0	11.5	15.2	18.8	24.4	34.6
4-C	12.6	15.9	18.3	19.6	24.7	28.0	31.8	38.7
4-D	12.7	15.6	18.6	19.9	27.4	31.6	36.2	38.8
4-E	12.1	14.2	16.9	18.1	25.9	30.5	34.5	38.2

Pore Size Distribution (Vol. Percent) — Organic Matter

	10 Cm T Percent	20 Cm T Percent	30 Cm T Percent	40 Cm T Percent	50 Cm T Percent	60 Cm T Percent	Organic Matter Percent
4-A	2.9	4.2	4.9	5.4	5.8	6.2	1.44
4-B	1.8	3.1	4.1	5.0	5.5	5.9	0.55
4-C	1.8	2.9	3.7	4.4	4.8	5.2	0.35
4-D	2.8	4.2	4.9	5.4	5.8	6.1	0.21
4-E	2.2	3.2	3.7	4.1	4.3	4.6	0.29

SOIL PROFILE DESCRIPTION

Sample 5

Soil Type: Olivier Silt Loam
Classification: Planosol
Topography: Nearly level (1-3% slope)
Drainage: Imperfectly drained
Parent Material: Old alluvium with loess influence
Area: Richland Parish, Louisiana
Location: SE, NE, Sec. 15, R9E, T17N, north of U.S. Hwy. 80, opposite gasoline plant road

Sample Designation	Horizon	Depth	Description
5-A	A_p	0"-4"	Dark grayish brown (10YR 4/2 moist) silt loam; moderate fine granular; friable.
5-B	A_{2an}	4"-8"	Yellowish brown (10YR 5/4 moist) silt loam; weak, fine to medium granular; slightly compacted (plow pan) but friable.
5-C	B_2	8"-21"	About equally mottled light gray (10YR 7/2 moist) and dark yellowish brown (10YR 4/4 moist) silty clay loam; moderate fine subangular blocky; friable; few dark concretions.
5-D	B_{3m1g}	21"-27"	Light gray (10YR 7/2 moist) silty clay loam with few fine to medium distinct dark yellowish brown (10YR 4/4) mottles; massive; somewhat firm; many dark concretions.
5-E	B_{3m2g}	27"-40"	Light gray (10YR 7/2 moist) clay with silt pockets and with many medium distinct dark yellowish brown (10YR 4/4) mottles; moderate fine subangular blocky; firm.

Remarks: Textures from mechanical analyses.

Described: June 1957.

SOIL PHYSICAL CHARACTERISTIC DATA

Olivier Series

Physical Analyses

Sample Number	Depth	Particle Size Analysis			Textural Class	Bulk Density Gm/Cm^3	Particle Density Gm/Cm^3	Permeability In/Hour	Total Pores
		% Clay	% Silt	% Sand					
5-A	0-4"	21.1	73.8	5.1	Si L	1.36	2.55	0.31	46.8
5-B	4-8"	27.2	70.9	1.9	Si L	1.37	2.54	.19	46.2
5-C	8-21"	29.6	67.5	2.9	Si Cl L	1.39	2.54	.33	45.4
5-D	21-27"	31.4	65.7	2.9	Si Cl L	1.42	2.55	.24	44.4
5-E	27-40"	41.7	56.4	1.9	Si Cl	1.50	2.59	.04	42.0

Moisture Desorption Data (% Moisture by Weight)

	15 atm. Percent	4 atm. Percent	2 atm. Percent	1 atm. Percent	2/3 atm. Percent	1/2 atm. Percent	1/3 atm. Percent	1/10 atm. Percent
5-A	6.6	8.5	9.8	10.9	17.2	20.8	29.4	38.9
5-B	7.7	10.3	12.5	13.6	20.8	25.1	31.2	36.9
5-C	9.2	12.0	14.3	18.4	21.5	23.8	28.8	37.6
5-D	7.1	9.8	11.8	15.3	18.8	21.5	27.5	30.8
5-E	15.4	19.0	21.9	26.5	28.2	29.7	34.1	38.1

Pore Size Distribution (Vol. Percent)

	10 Cm T Percent	20 Cm T Percent	30 Cm T Percent	40 Cm T Percent	50 Cm T Percent	60 Cm T Percent	Organic Matter Percent
5-A	2.1	2.8	3.0	3.1	3.3	3.6	2.18
5-B	1.6	3.0	3.9	4.5	5.1	5.7	0.76
5-C	2.9	4.4	5.3	5.8	6.2	6.7	0.31
5-D	3.0	4.6	5.4	5.8	6.2	6.6	0.22
5-E	2.2	3.3	3.9	4.4	4.7	5.0	0.10

SOIL PROFILE DESCRIPTION

Sample 6

Soil Type: Calhoun Silty Clay
Classification: Planosol
Topography: Level (0-1% slope)
Drainage: Poorly drained
Parent Material: Old alluvium with loess influence
Area: Richland Parish, Louisiana
Location: NE, NW, Sec. 16, R9E, T17N, north of Hwy. 1.3 mi. east of Dunn

Sample Designation	Horizon	Depth	Description
6-A	A_1	0"-3"	Dark gray (10YR 4/1 moist) silty clay; weak medium subangular blocky; friable to firm.
6-B	A_{2g}	3"-8"	Gray (10YR 5/1 moist) silty clay loam; weak medium subangular blocky; firm.
6-C	B_{2mg}	8"-18"	Gray (10YR 6/1 moist) silty clay with few fine to medium prominent yellowish red (5YR 4/6) mottles; moderate fine subangular blocky; firm; few dark concretions.
6-D	B_{3g}	18"-40"+	Gray (10YR 6/1 moist) silty clay with many medium prominent yellowish red (5YR 4/6) mottles; moderate fine subangular blocky; firm.

Remarks: Textures from mechanical analyses.

Described: June 1957.

SOIL PHYSICAL CHARACTERISTIC DATA

Calhoun Series

Physical Analyses

Sample Number	Depth	Particle Size Analysis % Clay	% Silt	% Sand	Textural Class	Bulk Density Gm/Cm^3	Particle Density Gm/Cm^3	Permeability In/Hour	Total Pores
6-A	0-3"	42.3	52.0	5.7	Si Cl	1.31	2.56	0.12	48.8
6-B	3-8"	39.4	49.2	11.4	Si Cl L	1.41	2.54	.14	44.5
6-C	8-18"	41.9	51.1	7.0	Si Cl	1.33	2.55	.06	47.7
6-D	18-40"	51.7	44.1	4.2	Si Cl	1.37	2.53	.00	45.8

Moisture Desorption Data (% Moisture by Weight)

	15 atm. Percent	4 atm. Percent	2 atm. Percent	1 atm. Percent	2/3 atm. Percent	1/2 atm. Percent	1/3 atm. Percent	1/10 atm. Percent
6-A	14.7	18.7	22.3	26.9	28.0	30.1	33.2	46.5
6-B	11.0	14.2	17.3	21.6	23.6	26.0	30.5	41.1
6-C	12.6	16.0	19.4	23.5	24.8	28.0	30.4	40.3
6-D	18.2	22.0	25.4	29.8	30.4	32.4	33.8	43.2

Pore Size Distribution (Vol. Percent)

	10 Cm T Percent	20 Cm T Percent	30 Cm T Percent	40 Cm T Percent	50 Cm T Percent	60 Cm T Percent	Organic Matter Percent
6-A	2.0	2.9	3.4	3.8	4.3	4.9	3.27
6-B	1.9	2.7	3.0	3.3	3.7	4.2	1.41
6-C	2.3	3.2	3.7	4.2	5.0	5.3	1.18
6-D	.2	.8	1.2	1.4	1.9	2.2	1.31

SOIL PROFILE DESCRIPTION

Sample 7

Soil Type: Mer Rouge* Loam
Classification: Brunizem
Topography: Level (0-1% slope)
Drainage: Moderately well drained
Parent Material: Alluvium dominantly from the Arkansas River
Area: Richland Parish, Louisiana
Location: SW, SW, Sec. 18, R6E, T11N, 150 ft. south of field road

Sample Designation	Horizon	Depth	Description
7-A	A_p	0"-6"	Very dark grayish brown (10YR 3/2 moist) loam; weak fine granular structure; very friable.
7-B	B_1	6"-12"	Very dark gray (10YR 3/1 moist) loam; weak medium subangular blocky; slightly compacted (plow pan) but friable.
7-C	B_2	12"-28"	Very dark gray (10YR 3/1 moist) sandy loam; massive; friable.
7-D	B_3	28"-42"+	Dark yellowish brown (10YR 4/4 moist) sandy loam; massive; friable; few medium-sized lime concretions.

Remarks: Textures from mechanical analyses.

Description: June 1957.

* Tentative series.

SOIL PHYSICAL CHARACTERISTIC DATA

Mer Rouge Series

Physical Analyses

Sample Number	Depth	Particle Size Analysis % Clay	% Silt	% Sand	Textural Class	Bulk Density Gm/Cm^3	Particle Density Gm/Cm^3	Permeability In/Hour	Total Pores
7-A	0-6"	21.1	36.4	42.5	L	1.39	2.51	0.01	44.7
7-B	6-12"	23.7	31.0	45.3	L	1.57	2.53	.00	37.6
7-C	12-28"	14.6	20.7	64.7	S L	1.51	2.57	.23	41.2
7-D	28-40"	16.6	16.2	67.2	S L	1.57	2.57	.24	39.0

Moisture Desorption Data (% Moisture by Weight)

	15 atm. Percent	4 atm. Percent	2 atm. Percent	1 atm. Percent	2/3 atm. Percent	1/2 atm. Percent	1/3 atm. Percent	1/10 atm. Percent
7-A	6.4	8.4	10.5	13.1	13.9	16.5	19.7	34.5
7-B	6.5	8.5	10.5	13.3	14.3	16.8	19.6	33.6
7-C	3.4	4.4	5.3	6.5	7.1	8.7	10.5	31.1
7-D	4.4	5.3	6.1	7.0	7.7	8.9	10.4	31.0

Pore Size Distribution (Vol. Percent)

	10 Cm T Percent	20 Cm T Percent	30 Cm T Percent	40 Cm T Percent	50 Cm T Percent	60 Cm T Percent
7-A	2.2	3.4	3.8	4.3	4.6	4.8
7-B	1.3	1.9	2.2	2.4	2.7	3.2
7-C	1.9	2.8	3.3	3.7	4.3	5.1
7-D	1.8	3.1	3.8	4.1	4.3	4.7

SOIL PROFILE DESCRIPTION

Sample 8

Soil Type: Gallion* Sandy Loam
Classification: Gray Brown Podzolic
Topography: Level (0-1% slope)
Drainage: Moderately well drained
Parent Material: Alluvium dominantly from the Arkansas River
Area: Caldwell Parish, Louisiana
Location: Spanish land grant, Sec. 41, R4E, T13N, 250 ft. west of tenant house on north side of Rupple farm

Sample Designation	Horizon	Depth	Description
8-A	A_p	0"-8"	Grayish brown (10YR 5/2 moist) sandy loam; weak medium subangular blocky; very friable.
8-B	A_2	8"-22"	Pale brown (10YR 6/3 moist) loam; massive; slightly compacted 8"-13" (plow pan); friable; few yellowish brown mottles.
8-C	B_2	22"-40"	Yellowish red (5YR 5/6 moist) clay; moderate fine subangular blocky; firm; peds coated with silt.

Remarks: Textures from mechanical analyses.

Described: June 1957.

* Tentative series.

SOIL PHYSICAL CHARACTERISTIC DATA

Gallion Series

Physical Analyses

Sample Number	Depth	Particle Size Analysis % Clay	% Silt	% Sand	Textural Class	Bulk Density Gm/Cm^3	Particle Density Gm/Cm^3	Permeability In/Hour	Total Pores
8-A	0-8"	12.7	29.0	58.3	S L	1.35	2.58	0.32	47.5
8-B	8-22"	24.6	31.2	44.2	L	1.52	2.58	.17	41.0
8-C	22-40"	49.0	36.3	14.7	Cl	1.54	2.58	.03	40.4

Moisture Desorption Data (% Moisture by Weight)

	15 atm. Percent	4 atm. Percent	2 atm. Percent	1 atm. Percent	2/3 atm. Percent	1/2 atm. Percent	1/3 atm. Percent	1/10 atm. Percent
8-A	3.7	4.7	4.9	5.7	6.8	8.2	10.8	31.4
8-B	8.7	10.9	12.7	15.2	17.4	19.5	23.7	35.6
8-C	18.1	21.5	24.3	27.0	29.8	31.6	34.2	43.1

Pore Size Distribution (Vol. Percent) — Organic Matter

	10 Cm T Percent	20 Cm T Percent	30 Cm T Percent	40 Cm T Percent	50 Cm T Percent	60 Cm T Percent	Organic Matter Percent
8-A	3.2	4.4	4.9	5.3	5.4	5.5	0.69
8-B	2.5	3.8	4.6	5.3	5.8	6.2	0.67
8-C	1.3	2.2	2.5	2.8	3.2	3.4	0.54

SOIL PROFILE DESCRIPTION

Sample 9

Soil Type: Charlieville* Clay (Perry)
Classification: Low Humic Gley - intergrade to Grumusol
Topography: Level (0-1% slope)
Drainage: Poorly drained
Parent Material: Alluvium dominantly from Arkansas River
Area: Caldwell Parish, Louisiana
Location: SE, SE, Sec. 29, R5E, T13N, 2.5 mi. west of Boeuf River Bridge on La. Hwy. 4

Sample Designation	Horizon	Depth	Description
9-A	A	0"-8"	About equally mottled gray (5Y 6/1 moist) and very dark grayish brown (10YR 3/2 moist) clay; coarse subangular blocky; very sticky and plastic.
9-B	C_g	8"-36"+	Gray (N 5/0 moist) clay with common fine pale brown (10YR 6/3) and yellowish brown (10YR 5/4) mottles; moderate fine angular blocky; very sticky and plastic.

Remarks: Textures from mechanical analysis.

Described: June 1957.

* Tentative series.

SOIL PHYSICAL CHARACTERISTIC DATA

Charlieville Clay (Perry) Series

Physical Analyses

Sample Number	Depth	Particle Size Analysis % Clay	% Silt	% Sand	Textural Class	Bulk Density Gm/Cm^3	Particle Density Gm/Cm^3	Permeability In/Hour	Total Pores
9-A	0-8"	71.1	27.1	1.8	Cl	1/	2.43[2]	1/	1/
9-B	8-36"	69.0	30.6	.4	Cl	1/	2.58[2]	1/	1/

Moisture Desorption Data (% Moisture by Weight)

	15 atm. Percent	4 atm. Percent	2 atm. Percent	1 atm. Percent	2/3 atm. Percent	1/2 atm. Percent	1/3 atm. Percent	1/10 atm. Percent
9-A	25.8	29.3	32.1	36.1	37.0	39.5	41.3	50.1
9-B	24.6	29.7	33.6	37.6	39.5	41.4	44.3	53.4

Pore Size Distribution (Vol. Percent)[1]

Organic Matter

Percent
3.07
1.93

1/ Data not valid.

2/ May have contained some organic matter.

SOIL PROFILE DESCRIPTION

Sample 10

Soil Type: Lintonia Silt Loam
Classification: Red and Yellow Podzolic
Topography: Nearly level (1-3% slope)
Drainage: Well drained
Parent Material: Old alluvium with loess influence
Area: Franklin Parish, Louisiana
Location: NW, NE, Sec. 12, R7E, T13N, west of herding pens at Experiment Station

Sample Designation	Horizon	Depth	Description
10-A	A_p	0"-4"	Dark grayish brown (10YR 4/2 moist) silt loam; moderate fine granular structure; friable.
10-B	B_{21}	4"-16"	Reddish brown (5YR 4/4 moist) silty clay; moderate medium subangular blocky structure; friable; strong clay skins.
10-C	B_{22}	16"-36"	Dark brown (7.5YR 4/4 moist) silty clay; moderate medium subangular blocky; friable; strong clay skins.

Remarks: Textures from mechanical analyses.

Described: June 1957.

SOIL PHYSICAL CHARACTERISTIC DATA

Lintonia Series

Physical Analyses

Sample Number	Depth	Particle Size Analysis % Clay	% Silt	% Sand	Textural Class	Bulk Density Gm/Cm3	Particle Density Gm/Cm3	Permeability In/Hour	Total Pores
10-A	0-4"	21.8	68.4	9.8	Si L	1.47	2.58	0.03	42.9
10-B	4-16"	42.8	55.1	2.1	Si Cl	1.45	2.58	.22	43.7
10-C	16-36"	37.2	61.7	1.1	Si Cl	1.42	2.59	.07	45.2

Moisture Desorption Data (% Moisture by Weight)

	15 atm. Percent	4 atm. Percent	2 atm. Percent	1 atm. Percent	2/3 atm. Percent	1/2 atm. Percent	1/3 atm. Percent	1/10 atm. Percent
10-A	5.7	7.5	9.0	12.1	16.1	19.9	27.5	34.6
10-B	15.7	19.1	21.7	24.5	26.8	29.4	31.4	37.6
10-C	14.8	17.1	20.4	24.5	29.4	32.4	35.7	42.0

Pore Size Distribution (Vol. Percent) / Organic Matter

	10 Cm T Percent	20 Cm T Percent	30 Cm T Percent	40 Cm T Percent	50 Cm T Percent	60 Cm T Percent	Organic Matter Percent
10-A	2.2	2.7	3.1	3.4	3.6	3.8	1.43
10-B	2.7	3.6	4.3	4.9	5.4	5.7	0.51
10-C	2.1	3.1	3.7	4.1	4.5	4.7	0.29

SOIL PROFILE DESCRIPTION

Sample 11

Soil Type: Charlieville* Clay (Perry)
Classification: Low Humic Gley - intergrade to Grumusol
Topography: Level (0-1% slope)
Drainage: Poorly drained
Parent Material: Alluvium dominantly from the Arkansas River
Area: Richland Parish, Louisiana
Location: NE, NE, Sec. 32, R5E, T15N, 0.6 mi. east on gravel road from La. Hwy. 561

Sample Designation	Horizon	Depth	Description
11-A	A	0"-6"	Dark grayish brown (10YR 4/2 moist) clay with common medium gray (5Y 6/1) mottles; moderate coarse angular blocky; very sticky and plastic.
11-B	C_g	6"-36"+	Gray (N 5/0 moist) clay with common fine pale brown (10YR 6.3) and yellowish brown (10YR 5/4) mottles; moderate fine angular blocky; very sticky and plastic.

Remarks: Textures from mechanical analyses.

Described: June 1957.

SOIL PHYSICAL CHARACTERISTIC DATA

Charlieville Clay (Perry) Series

Physical Analyses

Sample Number	Depth	Particle Size Analysis % Clay	% Silt	% Sand	Textural Class	Bulk Density Gm/Cm^3	Particle Density Gm/Cm^3	Permeability In/Hour	Total Pores
11-A	0-6"	58.6	39.4	2.0	Cl	1.26	2.48	Tr.	48.9
11-B	6-36"	65.2	33.6	1.2	Cl	1.28	2.47	.0	48.3

Moisture Desorption Data (% Moisture by Weight)

	15 atm. Percent	4 atm. Percent	2 atm. Percent	1 atm. Percent	2/3 atm. Percent	1/2 atm. Percent	1/3 atm. Percent	1/10 atm. Percent
11-A	26.0	27.7	30.3	36.2	36.5	38.2	41.7	51.7
11-B	25.9	29.3	31.9	37.4	37.6	40.0	43.5	46.0

	Pore Size Distribution (Vol. Percent)						Organic Matter
	10 Cm T Percent	20 Cm T Percent	30 Cm T Percent	40 Cm T Percent	50 Cm T Percent	60 Cm T Percent	Percent
11-A	1.3	1.9	2.4	2.9	3.1	3.3	2.39
11-B	.1	.4	.8	1.2	1.3	1.7	1.49

SOIL PROFILE DESCRIPTION

Sample 12

Soil Type: Yahola Loam (stratified phase)
Classification: Alluvial
Topography: Level (0-1% slope)
Drainage: Moderately well drained
Parent Material: Recent Red River alluvium
Area: Rapides Parish, Louisiana
Location: Spanish land grant, Sec. 39, R6W, T5N, on farm road 0.2 mi. east of La. Hwy. 121

Sample Designation	Horizon	Depth	Description
12-A	A_p	0"-8"	Reddish brown (5YR 4/4 moist) loam; weak medium subangular blocky; very friable.
12-B	$C_{(1)}$	8"-20"	Reddish brown (5YR 5/4 moist) loam; massive; friable.
12-C	$C_{(2)}$	20"-30"	Dark reddish brown (5YR 3/4 moist) silty clay; moderate medium subangular blocky; firm.
12-D	$C_{(3)}$	30"-40"	Reddish brown (5YR 4/4 moist) clay loam; moderate medium subangular blocky; firm.

Remarks; Textures from mechanical analyses.

Described: June 1957.

SOIL PHYSICAL CHARACTERISTIC DATA

Yahola (Stratified) Series

Physical Analyses

Sample Number	Depth	Particle Size Analysis % Clay	% Silt	% Sand	Textural Class	Bulk Density Gm/Cm^3	Particle Density Gm/Cm^3	Permeability In/Hour	Total Pores
12-A	0-8"	17.0	42.5	40.5	L	1.58	2.60	0.05	39.3
12-B	8-20"	20.1	44.2	35.7	L	1.54	2.61	.05	40.9
12-C	20-30"	49.8	40.6	9.6	Si Cl	1.44	2.60	.01	44.5
12-D	30-40"	27.7	36.3	36.0	Cl L	1.43	2.58	.03	44.7

Moisture Desorption Data (% Moisture by Weight)

	15 atm. Percent	4 atm. Percent	2 atm. Percent	1 atm. Percent	2/3 atm. Percent	1/2 atm. Percent	1/3 atm. Percent	1/10 atm. Percent
12-A	10.8	11.2	12.6	14.8	14.9	17.1	19.6	39.6
12-B	6.7	8.0	9.1	12.3	13.4	16.4	18.7	29.8
12-C	19.9	22.3	24.3	28.7	29.1	31.3	34.0	37.1
12-D	9.3	9.9	11.4	14.5	15.2	18.6	21.5	27.2

Pore Size Distribution (Vol. Percent) / Organic Matter

	10 Cm T Percent	20 Cm T Percent	30 Cm T Percent	40 Cm T Percent	50 Cm T Percent	60 Cm T Percent	Organic Matter Percent
12-A	1.4	2.1	2.2	2.4	2.7	3.0	1.39
12-B	1.1	1.7	2.0	2.3	2.7	3.1	0.66
12-C	.9	1.6	1.7	2.2	2.5	2.9	0.80
12-D	.8	1.5	1.7	2.0	2.3	2.7	0.95

SOIL PROFILE DESCRIPTION

Sample 13

Soil Type: Crowley Silty Clay
Classification: Low Humic Gley - intergrade to Grumusol
Topography: Level (0-1% slope)
Drainage: Somewhat poorly drained
Parent Material: Old alluvium with possible loess influence
Area: Jefferson Davis Parish, Louisiana
Location: SE, SW, Sec. 30, R4W, T10S, 300 ft. west of field gate

Sample Designation	Horizon	Depth	Description
13-A	A_p	0"-8"	Dark grayish brown (10YR 4/2 moist) silty clay with common medium prominent yellowish red (5YR 4/8) mottles, also yellowish red staining between peds; weak medium platy; hard when dry.
13-B	A_{2g}	8"-13"	Gray (10YR 6/1 moist) silty clay with common fine prominent yellowish red (5YR 4/8) mottles; hard when dry.
13-C	B_{2g}	13"-26"	Gray (10YR 6/1 moist) clay with many medium prominent red (2.5YR 4/8) mottles; moderate very fine subangular blocky; hard when dry.
13-D	B_{3g}	26"-42"+	Gray (10YR 5/1 moist) clay with many medium prominent light olive-brown (2.5Y 5/6) mottles; moderate very fine subangular blocky; hard when dry.

Remarks: Textures from mechanical analyses.

Described: June 1957.

SOIL PHYSICAL CHARACTERISTIC DATA

Crowley Series

Physical Analyses

Sample Number	Depth	Particle Size Analysis % Clay	% Silt	% Sand	Textural Class	Bulk Density Gm/Cm^3	Particle Density Gm/Cm^3	Permeability In/Hour	Total Pores
13-A	0-8"	42.7	42.5	14.8	Si Cl	1.25	2.54	0.65	50.9
13-B	8-13"	40.2	45.5	14.3	Si Cl	1.25	2.55	.04	51.1
13-C	13-26"	55.1	34.3	10.6	Cl	1.36	2.54	.09	48.7
13-D	26-36"	62.2	30.9	6.9	Cl	1.43	2.53	.00	43.2

Moisture Desorption Data (% Moisture by Weight)

	15 atm. Percent	4 atm. Percent	2 atm. Percent	1 atm. Percent	2/3 atm. Percent	1/2 atm. Percent	1/3 atm. Percent	1/10 atm. Percent
13-A	13.2	16.9	19.7	24.4	24.8	26.4	31.1	35.4
13-B	12.2	16.4	18.8	23.2	24.9	26.2	30.8	33.8
13-C	25.4	27.5	29.1	33.1	34.7	36.1	40.1	44.9
13-D	23.9	28.4	30.7	34.9	36.2	37.9	42.1	46.0

Pore Size Distribution (Vol. Percent) — Organic Matter

	10 Cm T Percent	20 Cm T Percent	30 Cm T Percent	40 Cm T Percent	50 Cm T Percent	60 Cm T Percent	Organic Matter Percent
13-A	4.2	5.6	6.6	7.5	8.2	8.6	2.53
13-B	1.9	2.7	3.9	5.3	6.4	7.2	1.38
13-C	1.2	2.5	3.4	4.0	4.6	4.9	0.87
13-D	.4	1.3	2.0	2.9	3.5	4.0	0.39

SOIL PROFILE DESCRIPTION

Sample 14

Soil Type: Beaumont Clay
Classification: Grumusol
Topography: Level (0-1% slope)
Drainage: Poorly drained
Parent Material: Old alluvium
Area: Jefferson Davis Parish, Louisiana
Location: SW, SW, Sec. 6, R4W, T11S, at road intersection

Sample Designation	Horizon	Depth	Description
14-A	A_p	0"-8"	Black (10YR 2/1 moist) clay; weak fine granular; hard when dry.
14-B	B_2	8"-36"+	Gray (10YR 5/1 moist) clay with common fine faint yellowish brown (10YR 5/4) mottles; moderate fine angular blocky; hard when dry; very sticky when wet.

Remarks: Textures from mechanical analyses.

Described: June 1957.

SOIL PHYSICAL CHARACTERISTIC DATA

Beaumont Series

Physical Analyses

Sample Number	Depth	Particle Size Analysis % Clay	 % Silt	 % Sand	Tex-tural Class	Bulk Density Gm/Cm^3	Particle Density Gm/Cm^3	Permea-bility In/Hour	Total Pores
14-A	0-8"	52.0	35.7	12.3	Cl	1.05	2.38	Tr.	56.2
15-B	8-36"	65.9	27.8	6.3	Cl	1.30	2.46	0.02	47.0

Moisture Desorption Data (% Moisture by Weight)

	15 atm. Percent	4 atm. Percent	2 atm. Percent	1 atm. Percent	2/3 atm. Percent	1/2 atm. Percent	1/3 atm. Percent	1/10 atm. Percent
14-A	23.2	29.5	32.3	37.8	38.2	40.6	46.4	52.5
14-B	28.9	33.4	35.2	39.4	40.8	42.3	47.0	51.0

	Pore Size Distribution (Vol. Percent) 10 Cm T Percent	 20 Cm T Percent	 30 Cm T Percent	 40 Cm T Percent	 50 Cm T Percent	 60 Cm T Percent	Organic Matter Percent
14-A	2.5	2.8	3.3	3.8	4.5	4.8	4.50
14-B	1.3	2.1	2.8	3.3	3.9	4.6	2.11

SOIL PROFILE DESCRIPTION

Sample 15

Soil Type: Crowley Silt Loam
Classification: Planosol
Topography: Level (0-1% slope)
Drainage: Imperfectly drained
Parent Material: Old alluvium with possible loess influence
Area: Jefferson Davis Parish, Louisiana
Location: NW, NW, Sec. 3, R3W, T11N, 150 yds. south of power substation

Sample Designation	Horizon	Depth	Description
15-A	A_p	0"-5"	Grayish brown (10YR 5/2 moist) silt loam; weak fine granular structure; very friable; yellowish red (5YR 4/8) staining between peds and in root channels.
15-B	A_{2g}	5"-15"	Gray (10YR 5/1 moist) silt loam with common medium faint white (10YR 8/1) and common fine prominent dark brown (10YR 3/3) mottles; massive; firm; few hard concretions; many pin holes.
15-C	B_{2g}	15"-36"	Gray (10YR 6/1 moist) silty clay with many medium prominent red (2.5YR 4/6) mottles; peds coated and cracks filled with gray (10YR 5/1) silt loam; moderate fine angular blocky; firm.

Remarks: Textures from mechanical analyses.

Described: June 1957.

SOIL PHYSICAL CHARACTERISTIC DATA

Crowley Series

Physical Analyses

Sample Number	Depth	Particle Size Analysis % Clay	% Silt	% Sand	Textural Class	Bulk Density Gm/Cm^3	Particle Density Gm/Cm^3	Permeability In/Hour	Total Pores
15-A	0-5"	16.3	72.7	11.0	Si L	1.44	2.57	0.27	39.6
15-B	5-15"	15.5	55.2	29.3	Si L	1.52	2.46	.16	38.3
15-C	15-36"	43.6	42.6	13.8	Si Cl	1.40	2.48	Tr.	43.3

Moisture Desorption Data (% Moisture by Weight)

	15 atm. Percent	4 atm. Percent	2 atm. Percent	1 atm. Percent	2/3 atm. Percent	1/2 atm. Percent	1/3 atm. Percent	1/10 atm. Percent
15-A	5.7	7.0	7.1	10.6	12.5	15.3	23.0	33.1
15-B	4.6	6.2	7.0	10.6	11.9	15.2	22.1	28.5
15-C	18.3	23.0	25.6	30.3	30.4	32.1	35.7	39.1

Pore Size Distribution (Vol. Percent) — Organic Matter

	10 Cm T Percent	20 Cm T Percent	30 Cm T Percent	40 Cm T Percent	50 Cm T Percent	60 Cm T Percent	Organic Matter Percent
15-A	1.7	2.4	2.6	2.6	2.9	3.3	1.33
15-B	1.8	2.7	3.2	3.4	3.8	4.2	0.76
15-C	.3	1.0	1.6	2.1	2.6	3.0	1.14

SOIL PROFILE DESCRIPTION

Sample 16

Soil Type: Yahola Loam
Classification: Alluvial
Topography: Level (0-1% slope)
Drainage: Moderately well drained
Parent Material: Recent Red River alluvium
Area: Rapides Parish, Louisiana
Location: Sec. 16, R1W, T4N, between auction barn and La. Hwy. 1

Sample Designation	Horizon	Depth	Description
16-A	A_p	0"-6"	Reddish brown (5YR 5/4 moist) loam; weak medium subangular blocky; very friable.
16-B	$C_{(1)}$	6"-15"	Reddish brown (5YR 5/4 moist) loam; massive; slightly compacted (plow pan) but friable.
16-C	$C_{(2)}$	15"-36"	Reddish brown (5YR 5/4 moist) loam; massive; very friable.

Remarks: Textures from mechanical analyses.

Described: June 1957.

SOIL PHYSICAL CHARACTERISTIC DATA

Yahola Series

Physical Analyses

Sample Number	Depth	Particle Size Analysis % Clay	% Silt	% Sand	Tex-tural Class	Bulk Density Gm/Cm^3	Particle Density Gm/Cm^3	Permea-bility In/Hour	Total Pores
16-A	0-6"	11.6	49.4	39.0	L	1.37	2.51	0.12	45.3
16-B	6-15"	15.7	37.4	46.9	L	1.42	2.57	.27	44.6
16-C	15-36"	16.7	45.1	38.2	L	1.28	2.55	3.65	49.9

Moisture Desorption Data (% Moisture by Weight)

	15 atm. Percent	4 atm. Percent	2 atm. Percent	1 atm. Percent	2/3 atm. Percent	1/2 atm. Percent	1/3 atm. Percent	1/10 atm. Percent
16-A	4.5	5.4	5.5	7.4	8.5	10.6	14.2	31.6
16-B	5.3	6.4	7.2	9.4	10.3	15.0	16.0	30.7
16-C	5.0	6.7	7.3	9.5	11.5	13.8	17.9	29.1

Pore Size Distribution (Vol. Percent) / Organic Matter

	10 Cm T Percent	20 Cm T Percent	30 Cm T Percent	40 Cm T Percent	50 Cm T Percent	60 Cm T Percent	Organic Matter Percent
16-A	1.8	2.4	3.1	3.3	3.6	3.8	1.22
16-B	2.0	2.9	3.8	4.8	5.7	6.5	0.63
16-C	2.1	3.3	4.5	6.6	8.8	10.7	0.68

SOIL PROFILE DESCRIPTION

Sample 17

Soil Type: Miller Silty Clay Loam
Classification: Alluvial
Topography: Level (0-1% slope)
Drainage: Imperfectly drained
Parent Material: Recent Red River alluvium
Area: Rapides Parish, Louisiana
Location: Sec. 5, R3W, T4N, 1.3 mi. north of La. Hwy. 121 on La. Hwy. 1200

Sample Designation	Horizon	Depth	Description
17-A	A_p	0"-5"	Dark reddish brown (5YR 3/3 moist) silty clay loam; weak medium subangular blocky; friable.
17-B	$C_{(1)}$	5"-18"	Dark reddish brown (5YR 3/4 moist) silty clay; weak medium subangular blocky; friable to firm.
17-C	$C_{(2)}$	18"-40"	Dark reddish brown (5YR 3/4 moist) clay; moderate fine angular blocky; firm.

Remarks: Textures from mechanical analyses.

Description: June 1957.

SOIL PHYSICAL CHARACTERISTIC DATA

Miller Series

Physical Analyses

Sample Number	Depth	Particle Size Analysis % Clay	 % Silt	 % Sand	Textural Class	Bulk Density Gm/Cm^3	Particle Density Gm/Cm^3	Permeability In/Hour	Total Pores
17-A	0-5"	38.7	57.8	3.5	Si Cl L	1.38	2.52	0.00	45.1
17-B	5-18"	54.8	44.7	.5	Si Cl	1.56	2.55	.00	38.9
17-C	18-40"	58.5	39.4	2.1	Cl	1.45	2.57	.03	43.4

Moisture Desorption Data (% Moisture by Weight)

	15 atm. Percent	4 atm. Percent	2 atm. Percent	1 atm. Percent	2/3 atm. Percent	1/2 atm. Percent	1/3 atm. Percent	1/10 atm. Percent
17-A	11.8	13.9	15.9	20.2	22.1	25.2	30.7	34.9
17-B	17.8	21.2	23.4	27.0	27.6	28.9	31.9	34.9
17-C	20.1	22.6	25.0	25.7	28.5	29.3	31.4	34.5

Pore Size Distribution (Vol. Percent) — Organic Matter

	10 Cm T Percent	20 Cm T Percent	30 Cm T Percent	40 Cm T Percent	50 Cm T Percent	60 Cm T Percent	Organic Matter Percent
17-A	1.0	1.8	2.1	2.4	2.7	3.0	2.16
17-B	1.1	1.7	1.9	2.2	2.4	2.7	0.64
17-C	1.2	2.0	2.4	2.8	3.1	3.5	-

SOIL PROFILE DESCRIPTION

Sample 18

Soil Type: Miller Clay
Classification: Grumusol
Topography: Level (0-1% slope)
Drainage: Imperfectly drained
Parent Material: Recent Red River alluvium
Area: Rapides Parish, Louisiana
Location: Sec. 13, R5W, T4N, 1 mi. south of Rapides on gravel road at drainage canal

Sample Designation	Horizon	Depth	Description
18-A	A_p	0"-5"	Dark reddish brown (5YR 3/2 moist) clay; moderate fine to medium angular blocky; firm.
18-B	C	5"-36"	Dark reddish brown (5YR 3/3 moist) clay; moderate very fine angular blocky; firm.

Remarks: Textures from mechanical analyses.

Described: June 1957.

SOIL PHYSICAL CHARACTERISTIC DATA

Miller Series

Physical Analyses

Sample Number	Depth	Particle Size Analysis % Clay	% Silt	% Sand	Textural Class	Bulk Density Gm/Cm^3	Particle Density Gm/Cm^3	Permeability In/Hour	Total Pores
18-A	0-5"	65.2	33.1	1.7	Cl	1.42	2.53	Tr.	43.8
18-B	5-36"	60.9	38.9	.2	Cl	1.46	2.52	0.01	42.2

Moisture Desorption Data (% Moisture by Weight)

	15 atm. Percent	4 atm. Percent	2 atm. Percent	1 atm. Percent	2/3 atm. Percent	1/2 atm. Percent	1/3 atm. Percent	1/10 atm. Percent
18-A	22.8	25.2	27.7	29.3	32.0	33.4	34.6	38.3
18-B	21.5	24.8	27.6	28.5	31.6	32.7	34.6	38.7

	Pore Size Distribution (Vol. Percent)						Organic Matter
	10 Cm T Percent	20 Cm T Percent	30 Cm T Percent	40 Cm T Percent	50 Cm T Percent	60 Cm T Percent	Percent
18-A	0.4	0.9	1.1	1.3	1.5	1.8	2.01
18-B	.7	1.1	1.6	1.9	2.1	2.6	1.24

SOIL PROFILE DESCRIPTION

Sample 19

Soil Type: Ruston Sandy Loam
Classification: Red and Yellow Podzolic
Topography: Gently sloping (3-5% slope)
Drainage: Well drained
Parent Material: Marine Terrace, unconsolidated sand, silts, and clays
Area: Grant Parish, Louisiana
Location: NE, NE, Sec. 10, R1W, T6N, 2.7 mi. west of Pollock on La. Hwy. 8

Sample Designation	Horizon	Depth	Description
19-A	A_p	0"-9"	Grayish brown (10YR 5/2 moist) sandy loam; weak fine to medium granular; very friable.
19-B	B_2	9"-24"	Yellowish red (5YR 4/6 moist) clay loam; moderate medium subangular blocky; firm.
19-C	B_3	24"-40"	Yellowish red (5YR 5/6 moist) clay loam; weak medium subangular blocky; friable.

Remarks: Textures from mechanical analyses.

Described: March 1958.

SOIL PHYSICAL CHARACTERISTIC DATA

Ruston Series

Physical Analyses

Sample Number	Depth	Particle Size Analysis % Clay	% Silt	% Sand	Textural Class	Bulk Density Gm/Cm³	Particle Density Gm/Cm³	Permeability In/Hour	Total Pores
19-A	0-9"	12.7	30.8	56.5	S L	1.48	2.55	0.64	42.0
19-B	9-24"	36.5	23.7	39.8	Cl L	1.56	2.58	.01	39.5
19-C	24-40"	33.6	23.6	42.8	Cl L	1.67	2.61	.03	36.0

Moisture Desorption Data (% Moisture by Weight)

	15 atm. Percent	4 atm. Percent	2 atm. Percent	1 atm. Percent	2/3 atm. Percent	1/2 atm. Percent	1/3 atm. Percent	1/10 atm. Percent
19-A	5.7	6.1	7.0	8.0	12.0	15.0	15.1	23.9
19-B	12.6	15.2	16.8	17.5	20.4	22.9	23.9	28.8
19-C	12.1	14.4	15.8	16.3	19.5	21.2	23.3	25.2

Pore Size Distribution (Vol. Percent) — Organic Matter

	10 Cm T Percent	20 Cm T Percent	30 Cm T Percent	40 Cm T Percent	50 Cm T Percent	60 Cm T Percent	Organic Matter Percent
19-A	2.0	3.7	5.4	6.7	7.7	8.6	2.17
19-B	.8	1.5	2.0	2.3	2.8	3.0	0.69
19-C	.9	1.4	1.9	2.1	2.4	2.5	0.31

SOIL PROFILE DESCRIPTION

Sample 20

Soil Type: Iberia Clay
Classification: Grumusol
Topography: Level (0-1% slope)
Drainage: Poorly drained
Parent Material: Mississippi alluvium
Area: Iberia Parish, Louisiana
Location: Sec. 5, T12S, R7E, 200 ft. north of curve on Hwy. 320

Sample Designation	Horizon	Depth	Description
20-A	A_p	0"-7"	Very dark gray (10YR 3/1 moist) clay; moderate fine to medium granular structure; sticky, plastic; pH 6.
20-B	B_2	7"-13"	Black (10YR 2/1 moist) clay; moderate coarse angular blocky structure; very sticky, very plastic; brownish staining in and around root channels; pH 6.
20-C	B_3	13"-26"+	About equally mottled very dark gray (10YR 3/1 moist) and light yellowish brown (2.5Y 6/4 moist) clay; moderate fine angular blocky structure; very sticky, very plastic; vertical tongues of very dark gray (10YR 3/1) clay; pH 7.

Remarks: Textures from mechanical analyses.

Described: June 1958.

SOIL PHYSICAL CHARACTERISTIC DATA

Iberia Series

Physical Analyses

Sample Number	Depth	Particle Size Analysis % Clay	% Silt	% Sand	Textural Class	Bulk Density Gm/Cm3	Particle Density Gm/Cm3	Permeability In/Hour	Total Pores
20-A	0-7"	53.7	32.0	14.3	Cl	1/	2.50	1/	1/
20-B	7-13	53.5	30.8	15.7	Cl	1/	2.53	1/	1/
20-C	13-26"	71.6	24.0	4.4	Cl	1/	2.57	1/	1/

Moisture Desorption Data (% Moisture by Weight)

	15 atm. Percent	4 atm. Percent	2 atm. Percent	1 atm. Percent	2/3 atm. Percent	1/2 atm. Percent	1/3 atm. Percent	1/10 atm. Percent
20-A	18.5	21.0	23.8	25.0	28.3	29.6	32.7	34.9
20-B	22.9	24.8	27.8	29.4	32.3	34.2	37.8	44.1
20-C	28.9	32.4	36.8	38.6	42.9	45.6	48.5	58.8

	Pore Size Distribution (Vol. Percent)1/	Organic Matter
20-A		-
20-B		-
20-C		-

1/ Data not valid.

SOIL PROFILE DESCRIPTION

Sample 21

Soil Type: Cypremort Loam
Classification: Gray-brown Podzolic
Topography: Level (0-1% slope)
Drainage: Imperfectly drained
Parent Material: Mississippi alluvium
Area: Iberia Parish, Louisiana
Location: Sec. 60, T12S, R7E, approximately 300 ft. south of Hwy. 86 junction on Hwy. 320

Sample Designation	Horizon	Depth	Description
21-A	A_p	0"-8"	Dark grayish brown (10YR 4/2 moist) loam; moderate fine granular structure; very friable, pH 6.
21-B	B_1	8"-14"	Very dark gray (10YR 3/1 moist) silty clay with pockets of light yellowish brown (2.5Y 6/4 moist) silty clay loam; weak medium prismatic structure; firm; pH 8.
21-C	B_2	14"-22"	About equally mottled very dark gray (10YR 3/1 moist) and light yellowish brown (2.5Y 6/4 moist) silty clay; firm; pH 8.
Not sampled	C	22"-42"	Light brownish gray (2.5Y 6/2 moist) silty clay loam and silty clay strata with few fine faint olive-yellow (2.5Y 6/6 mottles; weak fine angular blocky structure; friable; vertical tongues of very dark gray (N 3/0); pH 8.

Remarks: Textures from mechanical analyses.

Described: June 1958.

SOIL PHYSICAL CHARACTERISTIC DATA

Cypremort Series

Physical Analyses

Sample Number	Depth	Particle Size Analysis % Clay	% Silt	% Sand	Textural Class	Bulk Density Gm/Cm^3	Particle Density Gm/Cm^3	Permeability In/Hour	Total Pores
21-A	0-8"	27.0	47.9	25.1	L	1/	2.61	1/	1/
21-B	8-14"	42.3	51.1	6.6	Si Cl	1/	2.57	1/	1/
21-C	14-36"	41.3	44.6	14.1	Si Cl	1/	2.59	1/	1/

Moisture Desorption Data (% Moisture by Weight)

	15 atm. Percent	4 atm. Percent	2 atm. Percent	1 atm. Percent	2/3 atm. Percent	1/2 atm. Percent	1/3 atm. Percent	1/10 atm. Percent
21-A	10.1	11.6	13.2	14.0	17.4	19.2	22.5	35.5
21-B	21.1	22.2	25.2	26.5	30.2	32.5	35.1	40.2
21-C	19.2	20.1	23.2	24.7	28.8	31.1	34.0	42.3

	Pore Size Distribution (Vol. Percent)1/	Organic Matter Percent
21-A		1.39
21-B		0.99
21-C		1.07

1/ Data not valid.

SOIL PROFILE DESCRIPTION

Sample 22

Soil Type: Harris Mucky Clay, drained phase (drained fresh water marsh)
Classification: Half Bog
Topography: Level (0-1% slope)
Drainage: Very poorly drained
Parent Material: Mississippi alluvium
Area: St. Martin Parish (Spanish Lake), Louisiana
Location: Sec. 16, R6E, T11S, 200 ft. northwest and west of Hwy. 31 and Keystone Canal Junction

Sample Designation	Horizon	Depth	Description
22-A		0"-7"	Dark mucky clay; pH 6.0.
22-B		7"-20"+	Gray (N 6/0 moist) clay; massive; very sticky, very plastic; pH 7.0 increasing with depth.

Remarks: Textures from mechanical analyses.

Described: June 1958.

SOIL PHYSICAL CHARACTERISTIC DATA

Harris Mucky Clay Series

Physical Analyses

Sample Number	Depth	Particle Size Analysis % Clay	% Silt	% Sand	Textural Class	Bulk Density Gm/Cm^3	Particle Density Gm/Cm^3	Permeability In/Hour	Total Pores
22-A	0-7"	98.7[1]	0.8	0.5	Cl	2/	2.08[1]	2/	2/
22-B	7-20"	93.3[3]	6.5	.2	Cl	2/	2.60	2/	2/

Moisture Desorption Data (% Moisture by Weight)

	15 atm. Percent	4 atm. Percent	2 atm. Percent	1 atm. Percent	2/3 atm. Percent	1/2 atm. Percent	1/3 atm. Percent	1/10 atm. Percent
22-A	36.1	39.9	44.1	46.2	49.9	53.4	53.4	54.7
22-B	40.3	43.4	48.0	50.1	54.8	55.8	55.7	60.8

	Pore Size Distribution (Vol. Percent)[2]	Organic Matter Percent
22-A		19.3
22-B		2.6

1/ Includes 19.3% O.M.
2/ Data not valid.
3/ Includes 2.6% O.M.

SOIL PROFILE DESCRIPTION

Sample 23

Soil Type: Springfield Silt Loam
Classification: Planosol
Topography: Level (0-1% slope)
Drainage: Imperfectly drained
Parent Material: Old alluvium with loess influence
Area: Livingston Parish, Louisiana
Location: NE, NW, Sec. 31, R5E, T7S, 0.6 mi. southwest of road intersection at Frost on State Hwy. 42 at telephone post No. 24

Sample Designation	Horizon	Depth	Description
23-A	A_1	0"-2"	Dark gray (10YR 4/1 moist) silt loam; weak medium subangular blocky; friable to firm.
23-B	A_2	2"-7"	Gray (10YR 6/1 moist) silt loam with common medium distinct strong brown (7.5YR 5/6) mottles; weak medium to coarse subangular blocky; friable to firm.
23-C	B_2	7"-17"	Variegated very pale brown (10YR 7/3 moist), red (2.5YR 4/6 moist), and yellowish brown (10YR 5/6 moist) clay; moderate fine angular blocky; firm.
23-D	B_3	17"-36"	Yellowish brown (10YR 5/6 moist) silty clay with common medium to large faint gray (10YR 6/1) mottles; weak medium subangular blocky; firm; few dark soft concretions.
23-E	C	36"-42"+	Yellowish brown (10YR 5/6 moist) silty clay loam with common medium faint gray (10YR 6/1) mottles.

Described: March 1958.

SOIL PHYSICAL CHARACTERISTIC DATA

Springfield Series

Physical Analyses

Sample Number	Depth	Particle Size Analysis % Clay	% Silt	% Sand	Textural Class	Bulk Density Gm/Cm^3	Particle Density Gm/Cm^3	Permeability In/Hour	Total Pores
23-A1/	0-2"								
23-B1/	2-7"	13.2	74.5	12.3	Si L	1.51	2.59	0.05	41.6
23-C	7-17"	47.9	47.7	4.4	Si Cl	1.42	2.62	.12	45.9
23-D	17-36"	37.7	56.7	5.6	Si Cl L	1.60	2.62	.01	38.8
23-E	36-42"	29.9	62.2	7.9	Si Cl L	1.63	2.62	Tr.	37.8

Moisture Desorption Data (% Moisture by Weight)

	15 atm. Percent	4 atm. Percent	2 atm. Percent	1 atm. Percent	2/3 atm. Percent	1/2 atm. Percent	1/3 atm. Percent
23-A1/							
23-B1/	4.3	5.0	6.3	10.0	14.7	21.8	27.6
23-C	18.1	21.9	25.1	29.4	31.0	32.6	36.8
23-D	14.6	19.3	22.9	27.1	28.4	29.7	32.5
23-E	12.4	16.3	20.4	23.2	23.9	25.1	28.2

Pore Size Distribution (Vol. Percent)

	10 Cm T Percent	20 Cm T Percent	30 Cm T Percent	40 Cm T Percent	50 Cm T Percent	60 Cm T Percent	Moisture At Coring
23-A1/							
23-B1/	2.0	3.0	3.4	3.6	3.9	4.0	21.1
23-C	1.9	2.2	2.4	2.7	3.0	3.4	28.7
23-D	1.4	1.7	1.9	2.2	2.6	2.9	21.6
23-E	2.6	2.8	3.3	3.6	3.9	4.3	19.2

1/ Cores could not be taken at 0-2" depth and were obtained slightly below 2".

SOIL PROFILE DESCRIPTION

Sample 24

Soil Type: Providence Silt Loam
Classification: Red and Yellow Podzolic
Topography: Nearly level (1-3% slope)
Drainage: Moderately well drained
Parent Material: Thin mantle of loess over sandy Pleistocene Terrace
Area: St. Helena Parish, Louisiana
Location: Spanish land grant, Sec. 63, T3S, R4E, 1 mi. east of junction La. Hwy. 448 and 1042 on 1042

Sample Designation	Horizon	Depth	Description
24-A	A_1	0"-6"	Very dark brown (10YR 2/2 moist) silt loam with streaks of grayish brown (10YR 5/2 moist) mottles; weak fine granular; friable.
24-B	A_2	6"-11"	Brown (10YR 5/3 moist) and dark yellowish brown (10YR 4/4 moist) silt loam; weak fine granular; friable.
24-C	B_1	11"-22"	Yellowish brown (10YR 5/6 moist) silty clay loam; weak medium subangular blocky; friable; few small concretions.
24-D	B_2	22"-36"	Brownish yellow (10YR 6/8 moist) silty clay loam with many medium distinct gray (10YR 6/1) mottles; weak medium subangular blocky; firm; few small concretions.
24-E	D	36"-42"+	Light yellowish brown (10YR 6/4 moist) sandy clay loam with common medium faint white (10YR 8/1) mottles; massive; friable; few small concretions.

Described: March 1958.

SOIL PHYSICAL CHARACTERISTIC DATA

Providence Series

Physical Analyses

Sample Number	Depth	Particle Size Analysis % Clay	% Silt	% Sand	Textural Class	Bulk Density Gm/Cm^3	Particle Density Gm/Cm^3	Permeability In/Hour	Total Pores
24-A	0-6"	15.5	66.2	18.3	Si L	1.56	2.60	0.23	40.1
24-B	6-11"	22.2	63.0	14.8	Si L	1.52	2.65	.29	42.5
24-C	11-22"	30.4	57.5	12.1	Si Cl	1.55	2.65	.09	41.4
24-D	22-36"	35.6	49.5	14.9	Si Cl	1.59	2.64	.02	39.9
24-E	36-42"	26.7	45.3	28.0	L	1.61	2.59	.04	37.7

Moisture Desorption Data (% Moisture by Weight)

	15 atm. Percent	4 atm. Percent	2 atm. Percent	1 atm. Percent	2/3 atm. Percent	1/2 atm. Percent	1/3 atm. Percent
24-A	3.5	5.0	7.1	11.0	17.0	18.9	25.6
24-B	5.2	7.1	9.2	13.0	17.6	21.2	26.5
24-C	8.7	11.4	14.3	18.2	23.1	26.1	30.3
24-D	11.3	14.5	16.9	20.8	24.8	28.2	31.9
24-E	8.6	11.2	13.1	16.4	19.8	21.4	23.6

Pore Size Distribution (Vol. Percent)

	10 Cm T Percent	20 Cm T Percent	30 Cm T Percent	40 Cm T Percent	50 Cm T Percent	60 Cm T Percent	Moisture At Coring
24-A	1.4	2.2	2.7	3.1	3.2	3.4	19.2
24-B	2.2	3.5	3.8	4.3	4.8	5.1	21.5
24-C	2.4	3.4	3.8	4.1	4.5	4.7	24.0
24-D	2.3	3.1	3.3	3.4	3.6	4.1	22.8
24-E	3.3	4.6	4.7	5.0	5.3	5.5	15.4

SOIL PROFILE DESCRIPTION

Sample 25

Soil Type: Loring Silt Loam
Classification: Gray and Brown Podzolic
Topography: Gently sloping (3-5% slope)
Drainage: Moderately well to well drained
Parent Material: Peorian loess
Area: West Feliciana Parish, Louisiana
Location: Spanish land grant, Sec. 55, T3S, R3W, 0.7 mi. north of railroad crossing on west side of U.S. Hwy. 61

Sample Designation	Horizon	Depth	Description
25-A	A_1	0"-2"	Very dark grayish brown (10YR 3/2 moist) silt loam; moderate fine to medium granular; very friable.
25-B	A_2	2"-13"	Dark grayish brown (10YR 4/2 moist) silt loam; weak fine to medium subangular blocky; friable.
25-C	B_1	13"-19"	Dark brown (10YR 4/3 moist) silt loam; moderate fine subangular blocky; friable.
25-D	B_{21}	19"-26"	Dark brown (10YR 4/3 moist) or brown (10YR 5/3 moist) silty clay loam; moderate fine subangular blocky; friable to somewhat firm; many pinholes.
25-E	B_{22}	26"-42"+	Dark brown (10YR 4/3 moist) silty clay loam with few medium faint yellowish brown (10YR 5/6) mottles; moderate fine subangular blocky; firm; dark staining around peds.

Described: March 1958.

SOIL PHYSICAL CHARACTERISTIC DATA

Loring Series

Physical Analyses

Sample Number	Depth	Particle Size Analysis % Clay	% Silt	% Sand	Textural Class	Bulk Density Gm/Cm3	Particle Density Gm/Cm3	Permeability In/Hour	Total Pores
25-A[1]	0-2"								
25-B[1]	2-13"	15.1	81.7	3.2	Si L	1.30	2.51	0.31	48.3
25-C	13-19"	26.0	72.2	1.8	Si Cl L	1.44	2.57	.47	44.1
25-D	19-26"	34.6	64.4	1.2	Si Cl L	1.50	2.57	.33	41.8
25-E	26-42"	34.4	63.8	1.8	Si Cl L	1.53	2.64	.22	42.2

Moisture Desorption Data (% Moisture by Weight)

	15 atm. Percent	4 atm. Percent	2 atm. Percent	1 atm. Percent	2/3 atm. Percent	1/2 atm. Percent	1/3 atm. Percent
25-A[1]							
25-B[1]	3.5	5.1	6.5	9.2	15.9	17.5	27.4
25-C	8.2	11.8	14.2	18.0	23.7	25.4	30.2
25-D	11.6	15.9	18.5	22.6	27.7	27.9	33.5
25-E	12.5	16.0	19.1	22.9	26.8	28.3	33.0

Pore Size Distribution (Vol. Percent)

	10 Cm T Percent	20 Cm T Percent	30 Cm T Percent	40 Cm T Percent	50 Cm T Percent	60 Cm T Percent	Moisture At Coring
25-A[1]							
25-B[1]	2.1	2.7	3.1	3.3	3.7	4.2	24.8
25-C	3.5	5.0	5.6	6.3	6.7	7.1	22.8
25-D	2.8	4.2	4.4	4.5	4.7	4.9	26.6
25-E	2.4	3.1	3.2	3.4	3.5	3.7	26.6

[1] Cores could not be taken at 0-2" depth and were obtained slightly below 2"

SOIL PROFILE DESCRIPTION

Sample 26

Soil Type: Crevasse Sand
Classification: Regosol
Topography: Nearly level (1-3% slope)
Drainage: Somewhat excessively drained
Parent Material: Recent Mississippi alluvium
Area: East Carroll Parish, Louisiana
Location: Spanish land grant, Sec. 53, T19N, R13E, 0.7 mi. east on farm road from Bomer's Store, 100 ft. northeast of curve in road

Sample Designation	Horizon	Depth	Description
26-A	A_1	0"-2"	Dark gray (10YR 4/1 moist) loamy sand; single grain; loose.
26-B	$C_{(1)}$	2"-13"	Pale brown (10YR 6/3 moist) loamy sand; with salt-and-pepper mottles; single grain; loose.
26-C	$C_{(2)}$	13"-28"	Very pale brown (10YR 7/4 moist) loamy sand with salt-and-pepper mottles; single grain; loose.
26-D	$C_{(3)}$	28"-42"	Light yellowish brown (10YR 6/4 moist) fine sandy loam with common fine faint yellowish brown (10YR 5/8) mottles; massive; friable.

Described: March 1958.

SOIL PHYSICAL CHARACTERISTIC DATA

Crevasse Series

Physical Analyses

Sample Number	Depth	Particle Size Analysis % Clay	% Silt	% Sand	Textural Class	Bulk Density Gm/Cm3	Particle Density Gm/Cm3	Permeability In/Hour	Total Pores
26-A[1]	0-2"								
26-B[1]	2-13"	3.1	0.7	96.2	S	1.46	2.59	33.87	43.8
26-C	13-28"	3.8	1.2	95.0	S	1.48	2.59	20.64	42.9
26-D	28-42"	4.5	1.2	94.3	S	1.55	2.59	27.41	40.2

Moisture Desorption Data (% Moisture by Weight)

	15 atm. Percent	4 atm. Percent	2 atm. Percent	1 atm. Percent	2/3 atm. Percent	1/2 atm. Percent	1/3 atm. Percent
26-A[1]							
26-B[1]	1.9	2.2	2.2	2.2	-	-	2.7
26-C	2.1	2.2	2.2	2.3	2.3	2.5	2.9
26-D	1.6	1.7	1.8	2.2	2.3	2.5	2.9

Pore Size Distribution (Vol. Percent)

	10 Cm T Percent	20 Cm T Percent	30 Cm T Percent	40 Cm T Percent	50 Cm T Percent	60 Cm T Percent	Moisture At Coring
26-A[1]							
26-B[1]	2.2	6.3	16.4	22.8	24.8	25.7	4.1
26-C	1.2	2.8	6.3	12.5	17.7	21.9	13.6
26-D	1.0	2.6	5.8	14.1	21.0	24.2	25.7

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[1] Cores could not be taken at 0-2" depth and were obtained slightly below 2".

SOIL PROFILE DESCRIPTION

Sample 27

Soil Type: Tunica Silty Clay
Classification: Alluvial
Topography: Level (0-1% slope)
Drainage: Moderately well drained
Parent Material: Recent Mississippi alluvium
Area: Madison Parish, Louisiana
Location: Spanish land grant, Sec. 81, T15N, R13E, 100 ft. east of Roundaway Bayou, 20 ft. north of cross fence on Couch farm

Sample Designation	Horizon	Depth	Description
27-A	A_p	0"-4"	Dark grayish brown (10YR 4/2 moist) silty clay loam; weak coarse subangular blocky; firm.
27-B	$C_{(1)}$	4"-24"	Dark brown (10YR 4/3 moist) clay; moderate medium angular blocky; firm.
27-C	$C_{(2)}$	24"-32"	Brown (10YR 5/3 moist) silt loam; massive; friable.
27-D	$C_{(3)}$	32"-42"	Dark brown (10YR 4/3 moist) silty clay loam; moderate coarse subangular blocky; firm.

Described: March 1958.

SOIL PHYSICAL CHARACTERISTIC DATA

Tunica Series

Physical Analyses

Sample Number	Depth	Particle Size Analysis % Clay	% Silt	% Sand	Textural Class	Bulk Density Gm/Cm^3	Particle Density Gm/Cm^3	Permeability In/Hour	Total Pores
27-A	0-4"	41.2	57.0	1.8	Si Cl L	1/	2.63	1/	1/
27-B	4-24"	35.8	62.5	1.7	Si Cl L	1/	2.62	1/	1/
27-C	24-32"	30.3	67.6	2.1	Si Cl L	1/	2.63	1/	1/
27-D	32-42"	20.8	69.4	9.8	Si L	1/	2.62	1/	1/

Moisture Desorption Data (% Moisture by Weight)

	15 atm. Percent	4 atm. Percent	2 atm. Percent	1 atm. Percent	2/3 atm. Percent	1/2 atm. Percent	1/3 atm. Percent
27-A	13.9	16.8	19.7	23.9	28.0	30.9	32.6
27-B	15.2	17.9	20.8	25.9	28.7	30.8	33.7
27-C	13.9	15.5	18.2	22.6	27.9	30.5	32.7
27-D	9.1	11.3	13.1	16.0	21.2	24.7	25.8

Pore Size Distribution (Vol. Percent)1/

1/ Impossible to core because of moisture conditions.

SOIL PROFILE DESCRIPTION

Sample 28

Soil Type: Calhoun Silty Clay Loam
Classification: Planosol
Topography: Level (0-1% slope)
Drainage: Poorly drained
Parent Material: Old alluvium with loess influence
Area: Richland Parish, Louisiana
Location: SW, SE, Sec. 26, R9E, T18N, 100 ft. north of La. Hwy. 134 between church and drain

Sample Designation	Horizon	Depth	Description
28-A	A_1	0"-2"	Very dark gray (10YR 3/1 moist) silt loam; weak medium subangular blocky; firm.
28-B	A_{2g}	2"-6"	Gray (10YR 5/1 moist) or dark gray (10YR 4/1 moist) silt loam; weak medium subangular blocky; firm.
28-C	A_{3g}	6"-12"	Gray (10YR 6/1 moist) silt loam with common fine to medium prominent yellowish red (5YR 4/6) mottles; moderate fine subangular blocky; friable.
28-D	B_{2mg}	12"-24"	Gray (10YR 6/1 moist) silty clay loam with common fine to medium prominent yellowish red (5YR 4/6) mottles; few fine to medium soft to hard reddish concretions; massive; firm.
28-E	B_{3mg}	24"-42"	Gray (10YR 6/1 moist) silt loam with pockets of clay with many medium prominent yellowish red (5YR 4/6) mottles; many medium soft to hard reddish concretions.

Described: March 1958.

SOIL PHYSICAL CHARACTERISTIC DATA

Calhoun Series

Physical Analyses

Sample Number	Depth	Particle Size Analysis % Clay	% Silt	% Sand	Textural Class	Bulk Density Gm/Cm^3	Particle Density Gm/Cm^3	Permeability In/Hour	Total Pores
28-A1/	0-2"								
28-B1/	2-6"	27.2	67.0	5.8	Si Cl L	1.27	2.55	2/	50.2
28-C	6-12"	28.0	66.4	5.6	Si Cl L	1.36	2.58	2/	47.3
28-D	12-24"	41.6	53.8	4.6	Si Cl	1.40	2.57	0.05	45.4
28-E	24-42"	28.8	60.6	10.6	Si Cl L	1.52	2.59	.02	41.4

Moisture Desorption Data (% Moisture by Weight)

	15 atm. Percent	4 atm. Percent	2 atm. Percent	1 atm. Percent	2/3 atm. Percent	1/2 atm. Percent	1/3 atm. Percent
28-A1/							
28-B1/	7.0	11.3	13.1	17.5	24.4	26.2	30.1
28-C	8.9	13.6	15.4	19.4	24.4	27.8	30.0
28-D	15.1	20.6	21.9	24.8	25.5	29.6	33.1
28-E	12.1	15.5	18.2	23.3	24.2	26.8	30.4

Pore Size Distribution (Vol. Percent)

	10 Cm T Percent	20 Cm T Percent	30 Cm T Percent	40 Cm T Percent	50 Cm T Percent	60 Cm T Percent	Moisture At Coring
28-A1/							
28-B1/	2.2	3.0	3.6	4.0	4.6	4.8	26.9
28-C	2.0	3.0	3.4	4.5	4.9	5.3	27.4
28-D	1.4	1.8	2.3	2.8	3.1	3.5	28.5
28-E	1.2	2.0	2.7	3.1	3.6	3.8	23.5

1/ Cores could not be taken at 0-2" depth and were obtained slightly below 2".

2/ Not valid.

SOIL PROFILE DESCRIPTION

Sample 29

Soil Type: Foley Silt Loam
Classification: Solodized-Solonetz
Topography: Level (0-1% slope)
Drainage: Imperfectly to poorly drained
Parent Material: Old alluvium with loess influence
Area: Richland Parish, Louisiana
Location: NW, NW, Sec. 25, R6E, T18N, across road from southwest corner of cemetery

Sample Designation	Horizon	Depth	Description
29-A	A_p	0"-3"	Grayish brown (2.5Y 5/2 moist) silt loam; weak medium platy; firm; common fine dark hard concretions.
29-B	B_{2g}	3"-5"	Grayish brown (2.5Y 5/2 moist) light silty clay loam; massive; very hard; many fine hard dark concretions; pH 6.5.
29-C	B_{3m1g}	5"-12"	Variegated light gray (2.5Y 7/2 moist) and grayish brown (2.5Y 5/2 moist) loam; massive; extremely hard; few fine dark hard concretions; pH 6.5.
29-D	B_{3m2g}	12"-22"	Variegated grayish brown (2.5Y 5/2 moist) and light brownish gray (2.5Y 6/2 moist) silty clay with silt in pockets and between peds; moderate medium subangular blocky; very hard; few fine hard concretions; pH 8.0.
29-E	C	22"-42"	Variegated grayish brown (2.5Y 5/2 moist) and dark brown (7.5YR 4/4 moist) silty clay with some silt between peds; pH 8.0.

Remarks: Drainage poorer than for typical Foley.

Described: June 1957.

SOIL PHYSICAL CHARACTERISTIC DATA

Foley Series

Physical Analyses

Sample Number	Depth	Particle Size Analysis % Clay	% Silt	% Sand	Textural Class	Bulk Density Gm/Cm^3	Particle Density Gm/Cm^3	Permeability In/Hour	Total Pores
29-A[1/]	0-3"								
29-B[1/]	3-5"	14.1	69.0	16.9	Si L	1.52	2.57	0.03	40.8
29-C	5-12"	33.8	51.1	15.1	Si Cl	1.57	2.57	Tr.	38.8
29-D[2/]	12-22"								
29-E[2/]	22-42"								

Moisture Desorption Data (% Moisture by Weight)

	15 atm. Percent	4 atm. Percent	2 atm. Percent	1 atm. Percent	2/3 atm. Percent	1/2 atm. Percent	1/3 atm. Percent
29-A[1/]							
29-B[1/]	7.5	10.8	13.2	16.6	19.8	23.5	25.1
29-C	9.5	13.5	15.9	19.6	21.4	25.0	26.0
29-D[2/]							
29-E[2/]							

Pore Size Distribution (Vol. Percent)

	10 Cm T Percent	20 Cm T Percent	30 Cm T Percent	40 Cm T Percent	50 Cm T Percent	60 Cm T Percent	Moisture At Coring
29-A[1/]							
29-B[1/]	1.9	2.6	3.1	3.4	3.7	3.9	21.5
29-C	.3	.8	1.3	1.6	2.1	2.4	20.6
29-D[2/]							
29-E[2/]							

[1/] Cores could not be taken at 0-2" depth and were obtained slightly below 2".

[2/] Samples not available.

SOIL PROFILE DESCRIPTION

Sample 30

Soil Type: Hebert* Silt Loam
Classification: Gray and Brown Podzolic
Topography: Level (0-1% slope)
Drainage: Imperfectly drained
Parent Material: Alluvium dominantly from the Arkansas River
Area: Richland Parish, Louisiana
Location: NE, NW, Sec. 28, T17N, R6E, 3.7 mi. south of Start on La. Hwy. 133

Sample Designation	Horizon	Depth	Description
30-A	A_p	0"-4"	Dark brown (10YR 4/3 moist) silt loam; weak fine granular; very friable.
30-B	A_{2an}	4"-9"	Dark yellowish brown (10YR 4/4 moist) silt loam with common medium distinct gray (10YR 5/1) mottles; massive; firm; (plow pan); few fine soft concretions.
30-C	A_3	9"-20"	Grayish brown (10YR 5/2 moist) silt loam with common medium prominent yellowish red (5YR 4/8) mottles; weak fine and medium subangular blocky; friable; few fine soft concretions.
30-D	B_2	20"-28"	Yellowish red (5YR 4/6 moist) silty clay; moderate fine and medium subangular blocky; firm; silt coated around peds.
30-E	D_u	28"-42"	Reddish brown (5YR 4/4 moist) clay; weak medium subangular blocky; firm.

Described: March 1958.

* Tentative series.

SOIL PHYSICAL CHARACTERISTIC DATA

Hebert Series

Physical Analyses

Sample Number	Depth	Particle Size Analysis % Clay	% Silt	% Sand	Textural Class	Bulk Density Gm/Cm^3	Particle Density Gm/Cm^3	Permeability In/Hour	Total Pores
30-A	0-4"	17.9	54.5	27.6	Si L	1.45	2.56	0.35	43.3
30-B	4-9"	20.2	52.0	27.8	Si L	1.53	2.59	.09	40.9
30-C	9-20"	21.0	50.3	28.7	Si L	1.55	2.60	.14	40.5
30-D	20-28"	37.6	47.0	15.4	Si Cl	1.59	2.62	.01	39.5
30-E	28-42"	37.7	51.1	11.2	Si Cl	1.57	2.62	.06	40.0

Moisture Desorption Data (% Moisture by Weight)

	15 atm. Percent	4 atm. Percent	2 atm. Percent	1 atm. Percent	2/3 atm. Percent	1/2 atm. Percent	1/3 atm. Percent
30-A	5.3	7.0	8.8	13.1	14.2	16.0	20.2
30-B	5.8	7.9	9.6	12.8	15.1	16.7	20.7
30-C	6.1	8.2	9.9	13.1	15.8	17.0	21.5
30-D	14.5	18.5	22.2	25.5	26.5	28.0	30.1
30-E	15.3	19.1	21.1	26.4	26.6	27.1	30.2

Pore Size Distribution (Vol. Percent)

	10 Cm T Percent	20 Cm T Percent	30 Cm T Percent	40 Cm T Percent	50 Cm T Percent	60 Cm T Percent	Moisture At Coring
30-A	1.5	2.6	3.1	3.3	3.6	3.8	25.6
30-B	1.3	2.0	2.5	3.0	3.4	3.7	22.2
30-C	1.5	2.5	3.2	3.7	4.2	4.6	22.5
30-D	1.7	2.5	3.2	3.8	4.3	4.7	23.2
30-E	1.7	2.5	3.4	3.9	4.4	5.1	23.8

SOIL PROFILE DESCRIPTION

Sample 31

Soil Type: Kisatchie Sandy Loam
Classification: Low Humic Gley
Topography: Gently sloping (3-5% slope)
Drainage: Imperfectly drained
Parent Material: Tuffaceous Siltstone
Area: Natchitoches Parish, Louisiana
Location: NW, SW, Sec. 20, T6N, R4W, 0.6 mi. east of Gailbraith on La. Hwy. 1 opposite pond

Sample Designation	Horizon	Depth	Description
31-A	A	0"-5"	Grayish brown (10YR 5/2 moist) sandy loam; weak medium subangular blocky; very friable; pH 6.0.
31-B	B_{21}	5"-11"	Light brownish gray (2.5Y 6/2 moist) clay with common fine to medium prominent reddish yellow (7.5YR 6/8) mottles; strong very fine to fine angular blocky; very firm; very plastic.
31-C	B_{22}	11"-18"	Light gray (2.5Y 7/2 moist) clay; strong very fine angular blocky; very firm; very plastic.
31-D	$C_{(1)}$	18"-29"	Dominantly soft, light gray rock with light gray (2.5Y 7/2 moist) clay; pH 4.0.
31-E	$C_{(2)}$	29"-42"	Light gray (2.5Y 7/2 moist) clay with some soft, light gray rock; pH 4.0.

Described: March 1958.

SOIL PHYSICAL CHARACTERISTIC DATA

Kisatchie Series

Physical Analyses

Sample Number	Depth	Particle Size Analysis % Clay	% Silt	% Sand	Textural Class	Bulk Density Gm/Cm^3	Particle Density Gm/Cm^3	Permeability In/Hour	Total Pores
31-A	0-5"	18.0	22.0	60.0	S L	1.55	2.59	0.03	38.0
31-B	5-11"	48.2	20.9	30.9	Cl	1.35	2.59	.00	48.0
31-C	11-18"	54.3	32.1	13.6	Cl	1/	1/	1/	1/
31-D2/	18-29"								
31-E2/	29-42"								

Moisture Desorption Data (% Moisture by Weight)

	15 atm. Percent	4 atm. Percent	2 atm. Percent	1 atm. Percent	2/3 atm. Percent	1/2 atm. Percent	1/3 atm. Percent
31-A	7.2	8.2	10.5	10.7	11.3	12.9	14.1
31-B	20.8	22.8	24.8	27.1	28.2	30.1	32.3
31-C	27.6	29.1	32.3	33.1	35.2	36.0	38.7
31-D2/							
31-E2/							

Pore Size Distribution (Vol. Percent)

	10 Cm T Percent	20 Cm T Percent	30 Cm T Percent	40 Cm T Percent	50 Cm T Percent	60 Cm T Percent	Moisture At Coring
31-A	2.6	3.9	4.8	5.8	6.7	7.9	14.9
31-B	1.5	1.9	2.3	2.8	3.3	3.8	36.2
31-C1/							
31-D2/							
31-E2/							

1/ Impossible to obtain valid cores because of moisture and texture.

2/ Impossible to obtain valid cores because of rocks.

SOIL PROFILE DESCRIPTION

Sample 32

Soil Type: Binnsville Clay (Negreet)
Classification: Rendzine
Topography: Nearly level (1-3% slope)
Drainage: Imperfectly drained
Parent Material: Marly clay
Area: Natchitoches Parish, Louisiana
Location: SW, SW, Sec. 21, T6N, R4W, 1.7 mi. east of Gailbraith on La. Hwy. 1

Sample Designation	Horizon	Depth	Description
32-A	A_1	0"-8"	Very dark gray (N 3/0 moist) or black (10YR 2/1 moist) clay; moderate fine granular structure; firm; pH 7.5.
32-B	A_3	8"-12"	Variegated pale brown (10YR 6/3 moist) and black (10YR 2/1 moist) clay; moderate very fine angular blocky; very firm; very plastic.
32-C	C	12"-42"	Pale olive (5Y 6/4 moist) marly clay; strong very fine angular blocky; pH 8.0.

Described: March 1958.

SOIL PHYSICAL CHARACTERISTIC DATA

Binnsville Clay (Negreet) Series

Physical Analyses

Sample Number	Depth	Particle Size Analysis % Clay	 % Silt	 % Sand	Textural Class	Bulk Density Gm/Cm^3	Particle Density Gm/Cm^3	Permeability In/Hour	Total Pores
32-A	0-8"	59.0	29.0	12.0	Cl	115.8	2.52	0.00	54.2
32-B	8-12"	65.6	27.0	7.4	Cl	1/	2.59	1/	1/
32-C	12-42"	62.0	34.1	3.9	Cl	1/	2.61	1/	1/

Moisture Desorption Data (% Moisture by Weight)

	15 atm. Percent	4 atm. Percent	2 atm. Percent	1 atm. Percent	2/3 atm. Percent	1/2 atm. Percent	1/3 atm. Percent
32-A	36.3	39.2	41.8	43.5	45.0	52.9	54.9
32-B	39.1	43.5	45.6	47.6	50.8	54.4	58.6
32-C	35.3	35.6	37.7	44.2	46.9	47.3	51.6

Pore Size Distribution (Vol. Percent)

	10 Cm T Percent	20 Cm T Percent	30 Cm T Percent	40 Cm T Percent	50 Cm T Percent	60 Cm T Percent	Moisture At Coring
32-A	2.5	3.7	3.8	4.0	4.2	4.4	37.8
32-B1/							
32-C1/							

1/ Core data not valid on B and C layers due to moisture and texture.

SOIL PROFILE DESCRIPTION

Sample 33

Soil Type: Lexington Silt Loam (Chicot)
Classification: Red and Yellow Podzolic
Topography: Gently sloping (3-5% slope)
Drainage: Well drained
Parent Material: Old alluvium with possible loess influence
Area: Evangeline Parish, Louisiana
Location: Spanish land grant, Sec. 55, T3S, 3 mi. south of Bayou Chicot on U.S. Hwy. 167

Sample Designation	Horizon	Depth	Description
33-A	A_p	0"-11"	Dark brown (7.5YR 4/4 moist) silt loam; weak medium subangular blocky; very friable.
33-B	B_2	11"-28"	Yellowish red (5YR 4/6 moist) or red (2.5YR 4/6 moist) heavy silty clay loam; strong medium subangular blocky; friable.
33-C	B_3	28"-42"	Yellowish red (5YR 5/6 moist) silty clay loam; moderate medium subangular blocky; friable.

Described: March 1958.

SOIL PHYSICAL CHARACTERISTIC DATA

Lexington (Chicot) Series

Physical Analyses

Sample Number	Depth	Particle Size Analysis % Clay	 % Silt	 % Sand	Textural Class	Bulk Density Gm/Cm3	Particle Density Gm/Cm3	Permeability In/Hour	Total Pores
33-A	0-11"	11.7	85.6	2.7	Si L	1.38	2.57	0.44	46.4
33-B	11-28"	36.6	61.5	1.9	Si Cl L	1.33	2.62	.85	49.3
33-C	28-42"	41.7	51.4	.9	Si Cl	1.48	2.65	.44	44.0

Moisture Desorption Data (% Moisture by Weight)

	15 atm. Percent	4 atm. Percent	2 atm. Percent	1 atm. Percent	2/3 atm. Percent	1/2 atm. Percent	1/3 atm. Percent
33-A	4.6	5.4	6.6	10.6	12.7	13.3	23.6
33-B	14.7	17.2	19.3	22.7	24.8	26.1	32.6
33-C	17.8	20.5	21.8	24.9	27.0	27.9	34.1

Pore Size Distribution (Vol. Percent)

	10 Cm T Percent	20 Cm T Percent	30 Cm T Percent	40 Cm T Percent	50 Cm T Percent	60 Cm T Percent	Moisture At Coring
33-A	2.1	2.6	2.9	3.2	3.6	4.2	17.3
33-B	3.0	4.7	6.0	7.0	7.7	8.4	17.6
33-C	2.4	3.4	4.0	4.6	5.0	5.4	24.2

SOIL PROFILE DESCRIPTION

Sample 34

Soil Type: Oberlin* Silt Loam
Classification: Planosol
Topography: Level (0-1% slope)
Drainage: Poorly drained
Parent Material: Old alluvium with possible loess influence
Area: Evangeline Parish, Louisiana
Location: Spanish land grant, Sec. 47, T4S, R2E, 2.1 mi. east of Hwy. 167 on gravel road

Sample Designation	Horizon	Depth	Description
34-A	A_1	0"-4"	Variegated dark gray (N 4/0 moist) and gray (N 5/0 moist) silt loam; weak medium subangular blocky; friable; reddish brown staining around roots.
34-B	B_{21}	4"-18"	Gray (N 6/0 moist) silty clay loam with few fine to medium prominent strong brown (7.5YR 5/8) mottles; moderate very fine subangular blocky; friable; common soft dark concretions.
34-C	B_{22}	18"-30"	Gray (5Y 6/1 moist) silty clay loam with common medium distinct yellowish brown (10YR 5/8) mottles; moderate very fine subangular blocky; friable.
34-D	D_u	30"-42"	Gray (5Y 6/1 moist) clay with many medium to large prominent strong brown (7.5YR 5/8) mottles; massive; very firm.

Described: March 1958.

* Tentative series.

SOIL PHYSICAL CHARACTERISTIC DATA

Oberlin Series

Physical Analyses

Sample Number	Depth	Particle Size Analysis % Clay	 % Silt	 % Sand	Textural Class	Bulk Density Gm/Cm^3	Particle Density Gm/Cm^3	Permeability In/Hour	Total Pores
34-A	0-4"	25.3	67.5	7.2	Si L	1.35	2.56	0.32	47.5
34-B	4-18"	28.2	62.4	9.4	Si Cl L	1.36	2.59	.16	47.4
34-C	18-30"	39.0	56.2	4.8	Si Cl L	1.38	2.60	.05	47.1
34-D	30-42"	42.5	53.5	4.0	Si Cl	1.46	2.61	Tr.	44.2

Moisture Desorption Data (% Moisture by Weight)

	15 atm. Percent	4 atm. Percent	2 atm. Percent	1 atm. Percent	2/3 atm. Percent	1/2 atm. Percent	1/3 atm. Percent
34-A	10.4	12.1	15.8	20.3	23.0	27.1	33.0
34-B	10.8	12.8	16.6	20.7	23.3	28.8	31.7
34-C	14.6	17.6	20.3	24.7	25.1	30.0	33.8
34-D	17.6	21.1	24.1	28.8	29.9	33.3	34.4

Pore Size Distribution (Vol. Percent)

	10 Cm T Percent	20 Cm T Percent	30 Cm T Percent	40 Cm T Percent	50 Cm T Percent	60 Cm T Percent	Moisture At Coring
34-A	2.4	3.1	3.5	4.0	4.6	5.0	26.2
34-B	1.5	3.1	3.8	4.5	5.1	5.7	27.2
34-C	3.0	4.1	4.7	5.3	5.8	6.2	25.3
34-D	2.5	3.1	3.4	3.7	4.1	4.7	28.0

SOIL PROFILE DESCRIPTION

Sample 35

Soil Type: Shubuta Fine Sandy Loam
Classification: Red and Yellow Podzolic
Topography: Undulating (1-5% slope)
Drainage: Well drained
Parent Material: Thinly bedded clays, sandy clays, and shales of Coastal Plain origin
Area: Bossier Parish, Louisiana
Location: Sec. 35, R13W, T23N, approximately 1/4 mi. east of La. Hwy. 3 and 50 ft. north of local road, near Bolinger

Sample Designation	Horizon	Depth	Description
35-A	A_p	0"-7"	Dark grayish brown (10YR 4/2 moist) fine sandy loam; weak fine granular; very small ironstone pebbles.
35-B	B_2	7"-19"	Red (2.5YR 4/8 moist) heavy sandy clay; strong fine granular; very firm.
35-C	B_3	19"-25"	Red (2.5YR 4/8 moist) heavy sandy clay with common distinct light gray (10YR 7/2) mottles; weak fine platy; firm.
35-D	$C_{(1)}$	25"-30"	Yellowish red (5YR 5/8 moist) sandy clay with (2.5YR 4/8) light gray (10YR 7/2) mottles; medium fine platy, firm.
35-E	$C_{(2)}$	30"-35"	Yellowish red (5YR 5/8 moist) sandy clay with (2.5YR 4/8) light gray (10YR 7/2) mottles; medium fine platy; firm.

Described: March 1958.

SOIL PHYSICAL CHARACTERISTIC DATA

Shubuta Series

Physical Analyses

Sample Number	Depth	Particle Size Analysis % Clay	% Silt	% Sand	Tex-tural Class	Bulk Density Gm/Cm^3	Particle Density Gm/Cm^3	Permea-bility In/Hour	Total Pores
35-A	0-7"	13.6	13.0	73.4	S L	1/	1/	1/	1/
35-B	7-19"	62.4	17.5	20.1	Cl	1.35	2.68	0.22	49.6
35-C	19-25"	63.5	20.9	15.6	Cl	1.41	2.68	.23	47.4
35-D	25-30"	53.7	26.2	20.1	Cl	1.49	2.64	.10	43.6
35-E	30-35"	57.3	27.6	15.1	Cl	1.46	2.63	.09	44.4

Moisture Desorption Data (% Moisture by Weight)

	15 atm. Percent	4 atm. Percent	2 atm. Percent	1 atm. Percent	2/3 atm. Percent	1/2 atm. Percent	1/3 atm. Percent
35-A	3.1	4.6	5.7	6.8	8.1	8.9	10.4
35-B	23.5	28.3	29.3	31.7	33.0	34.5	37.1
35-C	23.4	27.7	28.6	30.6	33.3	34.6	36.9
35-D	19.5	23.6	24.5	26.6	29.3	30.6	32.7
35-E	20.1	24.4	25.1	27.3	29.9	31.9	35.0

Pore Size Distribution (Vol. Percent)

	10 Cm T Percent	20 Cm T Percent	30 Cm T Percent	40 Cm T Percent	50 Cm T Percent	60 Cm T Percent	Moisture At Coring
35-A1/							13.2
35-B	2.4	3.7	4.4	5.0	5.8	5.9	29.6
35-C	1.4	2.7	3.3	3.7	4.2	4.4	31.8
35-D	2.0	2.7	3.2	3.6	4.0	4.2	27.8
35-E	2.1	2.6	3.2	3.6	4.0	4.2	28.7

1/ Too much gravel in this layer to core. Gravel ran 24.7%.

SOIL PROFILE DESCRIPTION

Sample 36

Soil Type: Boswell Fine Sandy Loam
Classification: Red and Yellow Podzolic
Topography: Undulating (1-5% slope)
Drainage: Moderately well drained
Parent Material: Thick acid clay beds of Coastal Plain origin
Area: Bossier Parish, Louisiana
Location: Sec. 16, T22N, R13W, 0.6 mi. southwest of Plain Dealing on State Hwy. 162, 100 ft. east of road

Sample Designation	Horizon	Depth	Description
36-A	A_p	0"-7"	Dark brown (10YR 4/3 moist) fine sandy loam; weak fine granular; very friable.
36-B	B_2	7"-16"	Red (2.5YR 4/8 moist) clay; moderate fine angular blocky; friable, plastic.
36-C	B_3	16"-31"	Dark red (10YR 3/6 moist) clay with common light reddish brown (2.5YR) mottles; moderate fine angular blocky; friable, plastic.
36-D	C	32"-40"+	Gray (N 6/0 moist) clay with many dark red (10R 3/6) mottles; weak fine angular blocky; firm, plastic.

Described: March 1958.

SOIL PHYSICAL CHARACTERISTIC DATA

Boswell Series

Physical Analyses

Sample Number	Depth	Particle Size Analysis % Clay	% Silt	% Sand	Tex-tural Class	Bulk Density Gm/Cm^3	Particle Density Gm/Cm^3	Permea-bility In/Hour	Total Pores
36-A	0-7"	10.4	29.6	60.0	S L	1.48	2.66	1.42	44.2
36-B	7-16"	54.0	20.0	26.0	Cl	1.32	2.64	1.08	50.1
36-C	16-31"	65.5	13.9	20.6	Cl	1/	2.66	1/	1/
36-D	32-40"	60.0	18.8	21.2	Cl	1/	2.68	1/	1/

Moisture Desorption Data (% Moisture by Weight)

	15 atm. Percent	4 atm. Percent	2 atm. Percent	1 atm. Percent	2/3 atm. Percent	1/2 atm. Percent	1/3 atm. Percent
36-A	3.5	4.6	5.4	6.9	7.4	8.3	11.9
36-B	20.4	24.1	26.3	28.4	29.7	30.8	32.8
36-C	26.5	24.7	31.7	34.2	36.9	37.5	39.4
36-D	27.6	28.4	30.5	32.2	35.4	39.1	39.5

Pore Size Distribution (Vol. Percent)

	10 Cm T Percent	20 Cm T Percent	30 Cm T Percent	40 Cm T Percent	50 Cm T Percent	60 Cm T Percent	Moisture At Coring
36-A	2.5	4.0	5.4	6.6	7.9	9.2	15.3
36-B	2.6	5.8	6.8	8.2	8.4	8.8	22.2
36-C1/							
36-D1/							

1/ Not cored because of strong structure and improper moisture conditions.

SOIL PROFILE DESCRIPTION

Sample 37

Soil Type: Lakeland Loamy Fine Sand
Classification: Regosol - Red and Yellow Podzolic intergrade
Topography: Undulating (1-5% slope)
Drainage: Excessively drained
Parent Material: Thick sand beds of Coastal Plain origin
Area: Bossier Parish, Louisiana
Location: Sec. 18, T22N, R13W, approximately 2.8 mi. west of Plain Dealing, 150 ft. south of La. Hwy. 2

Sample Designation	Horizon	Depth	Description
37-A	A_p	0"-5"	Dark grayish brown (10YR 4/2 moist) loamy fine sand; single grain; loose.
37-B	A_2	5"-24"	Grayish brown (10YR 5/2 moist) loamy fine sand; single grain; loose.
37-C	(B)	24"-50"	Yellowish brown (10YR 5/4 moist) loamy fine sand; single grain; loose.
37-D	C_1	50"-80"	Light yellowish brown (10YR 6/4 moist) fine sand with a few pockets of yellowish brown (10YR 5/4) loamy fine sand.
	D	80"-86"+	Variegated yellow, red, brown, and light gray sandy clay loam.

Described: March 1958.

SOIL PHYSICAL CHARACTERISTIC DATA

Lakeland Series

Physical Analyses

Sample Number	Depth	Particle Size Analysis % Clay	% Silt	% Sand	Textural Class	Bulk Density Gm/Cm^3	Particle Density Gm/Cm^3	Permeability In/Hour	Total Pores
37-A	0-5"	5.5	11.6	82.9	L F S	1.40	2.59	14.6	46.1
37-B	5-24"	6.5	9.2	84.3	L F S	1.41	2.60	11.3	45.8
37-C	24-50"	8.7	7.4	83.9	L F S	1.47	2.60	4.4	43.4
37-D	50-80"	3.2	3.8	93.0	S	1.43	2.59	22.1	44.9

Moisture Desorption Data (% Moisture by Weight)

	15 atm. Percent	4 atm. Percent	2 atm. Percent	1 atm. Percent	2/3 atm. Percent	1/2 atm. Percent	1/3 atm. Percent
37-A	2.1	2.5	3.0	3.8	4.8	5.4	7.2
37-B	1.3	1.8	2.3	2.9	3.9	4.3	5.7
37-C	1.4	2.0	2.5	3.1	4.2	4.4	6.3
37-D	1.0	1.3	1.4	1.5	1.7	2.1	2.6

Pore Size Distribution (Vol. Percent)

	10 Cm T Percent	20 Cm T Percent	30 Cm T Percent	40 Cm T Percent	50 Cm T Percent	60 Cm T Percent	Moisture At Coring
37-A	3.0	4.1	5.8	10.3	15.5	17.1	10.1
37-B	3.5	5.0	8.4	13.4	17.6	19.5	9.5
37-C	3.1	4.6	6.3	9.7	13.7	15.3	9.3
37-D	1.9	3.0	5.6	12.3	20.3	23.5	9.4